

**The Relationship between Resilience, Self-Regulation and the  
Academic Performance of Learners living in Townships under  
Adverse Circumstances**

**S. Schutte**

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Promoter: Prof J.L. de K. Monteith

Assistant promoter: Prof. L.C. Theron

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## ABSTRACT

In South African townships today many adolescents are faced with adverse circumstances which they have to cope with. Many risks occur when adolescents are faced with adversity. Research has shown that adversity is an increasingly common phenomenon in black families, and that many black families have proven themselves to be resilient and have maintained themselves to some extent. It is therefore understandable that the family is considered essential in raising adolescents who are socially and emotionally well-adapted. With the increasing number of risks faced by adolescents who do not have this support system the question is whether they will experience these adversities as stumbling blocks or turn them into stepping stones in their lives. The latter are those who demonstrate resilience.

The purpose of this study was to provide answers, by means of a literature review and empirical research, as to the extent to which adolescents who live under adverse circumstances demonstrate resilience and self-regulation in their academic work. This study also aimed to determine whether a relationship exists between resilience, self-regulation and the academic performance of learners. This was achieved by describing and understanding (a) resilience and the ability of adolescents to navigate and negotiate for essential protective resources (i.e. personal, familial, community and cultural resources) which are supposed to be available to adolescents, and; (b) to support a better understanding of the structure of self-regulated learning and its relation to academic performance from a social-cognitive perspective which embraces human functioning as the product of a dynamic, reciprocal and triadic interaction between personal (e.g. learner's knowledge, meta-cognition, motivation and anxiety), behavioural (e.g. self-observation and self-reaction) and environmental variables (e.g. academic outcomes, modelling and feedback from educators).

Three measurement instruments were administered to a group of 180 learners from a selected school. These learners all reside in a township. The measurement instruments were (a) a biographical questionnaire, (b) Self-Regulated Learning Questionnaire (SRLQ) and the (c) Child and Youth Resilience Measure (CYRM). The statistical analyses consisted of descriptive statistics and inferential statistics.

Analysis of the data showed no significant relationship between resilience and academic performance for the participants but showed a moderate relationship between academic performance and self-regulated learning, where the most important processes indicated were

*goal-setting, strategic planning and self-evaluation.* Between self-regulated learning and resilience no relationship was found.

Results furthermore show that academic performance was better for a group of participants who are high on self-regulation than for a group of participants who are low on self-regulation. It can therefore be concluded that the more self-regulated learners are, the better they perform academically.

**KEYWORDS:** adversity, resilience, resilient, self-regulated learning, self-regulation strategies, academic performance, risk factors, townships, South Africa, family, adolescents, school.

## OPSOMMING

Binne die vinnig groeiende Suid-Afrikaanse swart woonbuurtes, woon baie adolessente wat op 'n daaglikse basis ongunstige en moeilike omstandighede moet hanteer. In die proses van swaarkry kom baie risiko's voor wat hierdie adolessente in die gesig staar. Uit navorsing blyk dit duidelik dat swaarkry 'n toenemend algemene verskynsel by swart families is, nogtans kon heelwat swart families hulleself nog altyd in 'n mate handhaaf. Dit is daarom te verstane dat familie nog altyd as noodsaaklik beskou word in die grootmaakproses van adolessente sodat hulle emosioneel en sosiaal goed aangepas kan wees. Sonder 'n behoorlike ondersteuningstelsel ervaar adolessente toenemend 'n aantal risiko's wat die vraag laat ontstaan of die swaarkry vir hierdie adolessente 'n struikelblok of 'n suksesleer sal wees. In laasgenoemde geval sal hulle hulleself positief kan handhaaf.

Die doel van hierdie studie was om deur middel van 'n literatuurstudie en empiriese ondersoek antwoorde te verskaf oor die mate waarin adolessente wat in ongunstige of moeilike omstandighede leef hulleself kan handhaaf deur veerkragtigheid en of hulle selfgereguleerde leer kan toepas in hulle akademiese werk. Hierdie studie het ook ten doel gehad om vas te stel of daar 'n verhouding bestaan tussen veerkragtigheid, selfgereguleerde leer en akademiese prestasie. Dit is bereik deur die volgende te beskryf en te verstaan: (a) veerkragtigheid en die vermoë van adolessente om te onderhandel en hulleself te stuur tot by noodsaaklike beskermende hulpbronne (bv. persoonlike-, familie-, gemeenskaps- en kulturele hulpbronne) wat veronderstel is om beskikbaar te wees aan hulle; en (b) om 'n beter begrip van die struktuur van selfgereguleerde leer en die verhouding tot akademiese prestasie vanuit 'n sosiaal-kognitiewe perspektief te ondersteun. 'n Sosiaal-kognitiewe perspektief ondersteun menslike funksionering as die produk van 'n dinamiese wedersydse en drieledige interaksie tussen persoonlike (bv. leerder se kennis, metakognisie, motivering en ang) gedrags- (bv. selfwaarneming en selfreaksie) en omgewingsveranderlikes (bv. akademiese uitkomst, modellering en terugvoering van onderwysers).

Drie meetinstrumente is gebruik vir 'n groep van 180 leerders van 'n gekose skool. Al hierdie leerders woon in die swart woonbuurt. Die meetinstrumente was (a) 'n biografiese vraelys; (b) Selfgereguleerde leer vraelys (SRLQ) en (c) die *Child and Youth Resilience Measure* (CYRM). Die statistiese analyses bestaan uit beskrywende- en inferensiële statistiek.

Ontleding van die data toon geen beduidende verband tussen veerkragtigheid en akademiese prestasie van die deelnemers nie maar dui op 'n matige verhouding tussen akademiese prestasie en selfgereguleerde leer, waar die belangrikste prosesse *doelwitstelling*, *strategiese beplanning* en *self evaluering* was. Tussen selfgereguleerde leer en veerkragtigheid is geen verhouding gevind nie.

Verder dui resultate daarop dat akademiese prestasie hoër was vir 'n groep deelnemers waar selfreguleringsresultate ook hoër getoon het as 'n groep deelnemers wat laer resultate getoon het op selfregulering. Die gevolgtrekking word dus gemaak dat hoe meer selfgereguleerd 'n leerder is, hoe hoër is sy akademiese prestasie.

**SLEUTELWOORDE:** omstandighede, swaarkry, veerkragtig, veerkragtigheid, selfgereguleerde leer, selfgereguleerde strategieë, akademiese prestasie, risiko faktore, swart woonbuurte, Suid-Afrika, familie, adolessente, skool.

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# CHAPTER 1

## PROBLEM STATEMENT AND OVERVIEW OF STUDY

### 1.1 Problem statement

Learners in today's schools bring with them diverse learning, behaviour, emotional and social needs as they enter the classroom (Christiansen & Christiansen, 1997:1). Many of these learners find it difficult to succeed in school, while others experience little or no problems academically. Researchers have often asked why some learners are willing to persist and to work hard academically to overcome the impact of their learning obstacles while others give up (Werner & Smith, 1992:2).

Most teachers understand how learners from stable families and safe, enriching neighbourhoods are able to succeed academically. But, how do learners without these support structures, such as learners from townships, cope positively? Although most indicators signal “a doomed life ahead” some of these learners without positive support structures overcome adverse circumstances, develop and excel academically above expectation. The problem to be investigated with this research is therefore to investigate how learners living in a township under adverse circumstances and without a support system cope academically in school. The problem will be investigated within the context of resilience and self-regulated learning.

### 1.2 Literature review

In the post-apartheid era, black people in South Africa have a greater choice in the schools their children attend. More motivated or financially secure black families are able to send their children to better quality schools outside the townships (which are usually municipal settlements where informal housing exists, where cheaper housing is available and facilities and services are often inferior) in which they live (Anderson, 2000:7). Although black people can now live wherever they wish, the reality is that the vast majority still live in the townships.

The history of the black family during the last two centuries or so is inextricably linked to the socio-economical and political history of South Africa. Factors that exerted extreme pressure on the black family were, in particular, colonialism, industrialization and urbanization, as well as the political system of apartheid, which left many black people with a substandard education (Henn,

2005:6). The township environment mostly contains many risk factors that may become key barriers to learning, development and well-being. Taking into consideration the resilience of township youth, the legacy of apartheid and its associated risks need to be recognized: Families are in crisis; schools are in crisis, communities are in crisis. This paints a miserable picture of the potential for resilient functioning among black South African youth living in townships, because the structures that should serve as protective factors are in crisis (Theron, 2007:358).

According to Kumpfer (*in* Glantz & Johanson, 1999:189) and Ungar, Brown, Liebenberg, Othman, Kwong, Armstrong and Gilgun (2007:3) the social environment of an individual is extremely important in the resilience process. Resilience is both a characteristic of the individual child and a quality of that child's environment that provides the resources necessary for positive development despite adverse circumstances. Although the environment may contribute to adversity a resilient child draws from the positive social factors in the social environment (Smokowski, Reynolds & Bezruczko, 1999:427). Procidano and Heller (*in* Henn, 2005:105) define social support as the “*extent to which an individual believes that his/her needs for support, information and feedback are fulfilled*”. Mullis, Hill and Readdick (1999) identify three sources of support, namely family, formal sources (e.g. teachers at school) and informal sources (friends and other adults). Support is offered on four levels: emotional (e.g. unconditional acceptance), informational (e.g. the giving of advice), companionship (e.g. sense of belonging) and tangible/instrumental (e.g. financial support) (Henn, 2005:100).

A supportive school environment will therefore be a school in which adolescent learners know that their educators care for and support them; where the expectations are realistically high and where learners' participation is valued; where educators deeply believe that all learners can learn to use their minds well. In such a school, everybody strives towards the building of a resilient learning community (Crawage, 2005:66). Schools that promote resilience ensure safety for their learners by promoting a culture of teaching and learning, with emphasis on academic competence and excellence, encouraging the learners to develop a sense of purpose, autonomy, and efficacy and promoting a sense of belonging (Mampane, 2004:51). A pro-active approach from the school is based on building capacities, skills, and assets, as well as building health, coping skills, resilience and also supports strengthening the environment, not fixing the learners (Crawage, 2005:67).

Crawage (2005:67) provides a glimpse of a resilient learner: A resilient child is one who bounces back having endured adversity, who continues to function reasonably well despite continued exposure to risk. Resilience is normal development under difficult circumstances. Resilience is not a personality trait, but describes a dynamic process of positive adaptation in the face of significant adversity or risk (Ungar *et al.*, 2007:xxviii). *Positive adaptation* is usually defined in terms of manifested competence, or success, in achieving appropriate developmental tasks at different stages in life (Schoon, 2006:7; Wolin & Wolin, 1999:11).

Protective factors support resilience, which is divided into personal protective factors (innate factors), familial protective factors (derived from the family), community factors and socio-cultural protective factors. Protective factors improve stressful experiences by providing a healthy buffer that strengthens patterns of adaptation (Armstrong, Stroul & Boothroyd, 2005:391-2; Schoon, 2006:8-11).

Resilience is structured around the individual, the services the individual receives and the way knowledge is generated, all of which combine with characteristics of individuals that allow them to overcome the adversity they face and chart pathways to resilience (Ungar *et al.*, 2007:xxviii). These characteristics explain the differences and relationships between persons and explain the experiences and actions of an individual person who is self-regulated and resilient. Academically resilient learners could be defined as those who perform better than expected based on the risk present: they are able to keep up with the class level despite adversity, while in comparison there are those who are unable to keep up and who drop out (Enthoven, 2007:25).

Researchers have learned much about the processes through which people can overcome environmental constraints, regulate emotions and impulses, guide and motivate their actions, and thereby gain greater control over their lives (Cervone, 1996:40). Self-regulation is a process by which learners transform their mental abilities into academic skills (Zimmerman, 2002) and can be defined as the manner in which a learner systematically uses metacognitive, motivational and behaviour strategies to proactively seek out information and master these strategies (Archer, 1998; Ertmer & Newby, 1996:9; Paris & Paris, 2001; Pintrich & De Groot, 1990; Zimmerman, 1990; Zimmerman, 1996:182; Zimmerman, 1998:2). According to Zimmerman and Schunk (2001:5) self-regulated learners are learners that are meta-cognitively, motivationally and behaviour active participants in their own learning process. These learners self-generate thoughts, feelings and actions to attain their learning goals (Zimmerman &



Schunk, 2001:14). Self-regulated learners are aware of their level of knowledge, plan and set realistic goals for extending their knowledge, utilize environmental resources, and approach tasks awareness of consequences and self-evaluation (Hwang & Vrongistiuos, 2002:148).

Theories of self-regulated learning seek to explain and describe how a particular learner will learn and achieve despite apparent limitations in mental ability, social environmental background (e.g. township environment) or in the quality of schooling (Zimmerman & Schunk, 2001:8). Paris and Paris (2001:89) suggest that self-regulated learners can develop indirectly through experience, directly through instruction and engagement in practices that require self-regulation, but they also say that these three factors will probably operate together in classrooms as learners engage in schoolwork. An analysis of teacher-student interactions that foster SRL has led Perry (2002:2) to conclude that children engage in SRL in classrooms where they have the opportunity to engage in complex open-ended activities, make choices, control challenge and evaluate themselves and others. Perry (2002:3) has observed that teachers can in particular provide instrumental support to learners in the form of questioning, clarifying (help and solve problems) and modelling (by example), and also by creating opportunities (e.g. class buddies) for learners to support one another.

Self-Regulated Learning is thus an important aspect of learning and achievement in academic contexts. Self-regulating learners are much more likely to be successful in school (Pintrich, 2000:452) although some of them could come from adverse backgrounds. It is important for schools and classrooms to attempt to foster the development of resilience as well as self-regulated learning. Of course, there are developmental, environmental and motivational factors that can facilitate or constrain resiliency and self-regulated learning, but there are implicit and explicit ways to help foster and develop resilience and self-regulated learning (Pintrich, 2000:452, 453).

### **1.3 Purpose of research**

The purpose of this research was to investigate the relationship between resilience, self-regulation and the academic performance of learners living in township under adverse circumstances.

This purpose was achieved by investigating

- The relationship between resilience, self-regulated learning and the academic performance of learners;
- the relationship between resilience and the academic performance of learners;
- the relationship between self-regulated learning and the academic performance of learners.

## **1.4 Research design**

The method of research consisted of a review of relevant literature and an empirical investigation.

### **1.4.1 Review of literature**

Extensive literature searches were conducted on the EBSCOhost and ERIC databases catalogues of South African and international libraries, Sabinet as well as the World Wide Web. The following key words were used:

*adversity, resilience, resilient, self-regulated learning, self-regulation strategies, academic performance, risk factors, townships, South Africa, support structures, family, parents, adolescents, school, support structures.*

### **1.4.2 Empirical investigation**

A quantitative approach was used.

#### **1.4.2.1 Quantitative approach**

Maree and Pietersen (*in* Maree, 2007:145) define quantitative research as: “a process that is systematic and objective in its ways of using numerical data from only a selected subgroup of a universe (or population) to generalize the findings to the universe that is being studied”.

To adhere to the purpose and research question of this study an *ex post facto* research design was chosen. The term *ex post facto* means 'after the fact'. This indicates that *ex post facto* research is conducted after variation in the variable of interest has already been determined in the natural course of events (Ary *et al.*, 2006:356). Leedy and Ormrod (2005:108) explain *ex post facto* research as an approach in which a researcher looks at conditions that have already occurred and then collects data to investigate a possible relationship or correlation

between these conditions and subsequent characteristics or behaviour. As such this study investigated already established conditions, thus no manipulation of variables was done in this study.

- **Participants**

Learners (N≈182) of the Senior Phase (Grade 7, 8 and 9) of a selected General Education and Training School in the Fezile Dabi District (Department of Education: Free State) participated in this research study.

- **Instruments**

Three instruments were used to collect data from the participants in order to answer the research question. The first instrument was a biographical questionnaire (Appendix A), the second instrument was a Self-regulated Learning Questionnaire (SRLQ) (Appendix B) (Monteith, NWU) and the final instrument was the Child and Youth Resilient Measure (CYRM) (Appendix C) (Ungar & Liebenberg, 2011:126-149).

- **Variables**

With these instruments data on the following variables were obtained:

Independent variables:

- Biographical variables such as gender, age, grade etc.
- Self-regulation/Self-regulated learning with its individual or separate variables such as *goal setting, self-recording, self-evaluation, and self-reaction* (see par. 4.8.2 for the variables that constitute the SRLQ).
- Resilience with its resources such as *individual, familial, community and socio-cultural resources* (see par. 4.8.3 for the variables that constitute the CYRM).

Dependent variable:

- Academic performance of learners – Average of 1<sup>st</sup> and 2<sup>nd</sup> term results.

### **1.4.2.2 Statistical analysis**

The data were analyzed by the Statistical Consultation Service of the North West University, Potchefstroom using the SPSS package (SPSS Inc., 2009). This programme provides descriptive statistics and an overview of the main features of the distribution, means and standard deviation of the variables. The following statistics were used:

Descriptive analysis:

- Frequencies
- Average

Inferential Statistics:

- Factor analysis
- Cronbach alpha coefficient ( $\alpha$ );
- Correlation coefficients
- Multiple regression analysis, and
- Analysis of variance

## **1.5 Ethical aspects**

Permission to do the research was obtained from the relevant authorities:

- The North West University (Appendix D)
- Free State Department of Education – Fezile Dabi District
- The governing body and principal of the selected school

Letters of assent were sent out to the intended participants in order to receive the appropriate permission for testing. All participants had the choice whether to participate or not. All parents of learners, and learners themselves, were required to complete consent or assent forms, which granted the required permission for the learners to be participants in this study. The confidentiality of each and every participant was guaranteed and respected. Using pseudonyms and codes for identification ensured learners' anonymity and confidentiality during the questionnaire.

## **1.6 Chapter division**

The structure of this of this dissertation is presented by the following chapters:

- Chapter 1: Problem statement and overview of study
- Chapter 2: Resilience
- Chapter 3: Self-regulated learning
- Chapter 4: Method of research
- Chapter 5: Statistical analysis and interpretation of data
- Chapter 6: Summary, findings, and recommendations

## CHAPTER 2

### RESILIENCE: THE PATHWAY TO SUCCESS

#### 2.1 Introduction

Life is filled with stressors. According to Garmezy (*in* Cox, 2004:6) the majority of adolescents experience various hardships at some stage in their lives, this can include one or more potentially upsetting event, for example illness or death of close family or friends. Because of such hardships, many adolescents may find it difficult to concentrate; they may feel anxious, confused or depressed but still they function in a normal, healthy adaptive way. Such adaptive functioning in difficult times is why some adolescents can be called resilient (Bonanno, 2005:135).

The study of adolescents (for the purpose of this study – learners – age 13 to 16 years of age) who overcome risk and adversity enhances the understanding of both normal development and maladjustment (Masten, Best & Garmezy, 1990:425). The study of resilience therefore explores the health-enhancing abilities of individual, family and community resources and the developmental pathways of vulnerable children and youth (Ungar & Liebenberg, 2008:220).

In this chapter the concept of resilience and the resources that contribute to an adolescent being resilient is the main focal point. This chapter is structured as follows:

- ❖ Defining Resilience (par. 2.2)
- ❖ Critical Overview of Resilience Research (par. 2.3)
- ❖ Protective Resources (par. 2.4)
  - Individual characteristics contributing to resilience (par. 2.4.1)
  - Protective resources in the family (par. 2.4.2)
  - Environmental protective resources (par. 2.4.3)
  - Cultural protective resources (par. 2.4.4)
  - Reciprocity of resources (par. 2.4.5)

## 2.2 Defining resilience

Research in many countries has provided evidence of the ability of individuals to overcome severe hardship and to show positive adjustments when hardships appear: a phenomenon described as *resilience* (Schoon & Bynner, 2003:21).

Ungar (2008:220) explains that the word resilience has many uses. First, it may be a description of a set of characteristics adolescents have when, despite being born and raised in deprived circumstances, they grow up successfully. In this sense resilience refers to better than predicted developmental outcomes. Second, resilience may refer to an adolescent's competence when under stress. Third, resilience may be positive functioning indicating recovery from trauma. What these definitions share in common is that they all argue that resilience occurs in the presence of adversity (Ungar, 2008:220).

Ungar (2008:225) presents a more culturally and contextually relevant definition of resilience: *"In the context of exposure to significant adversity, whether psychological, environmental, or both, resilience is both the capacity of individuals to navigate their way to health-sustaining resources, including opportunities to experience feelings of well-being, and a condition of the individual's family, community and culture to provide these health resources and experiences in culturally meaningful ways"*. Ungar, Brown, Liebenberg, Cheung and Levine (2008:2) and Masten (2001:227) are of the opinion that resilience is an ordinary phenomenon and that protective resources have always been available and are provided by the community. Ungar *et al.* (2008:2) and Ungar (2008:225) emphasize that resilience is dependent on an adolescent's capacity to *navigate* towards protective resources that already exist and the use of these resources in ways that are culturally meaningful to the adolescent, the family and the shared community.

So, two processes explain resilience: navigation and negotiation. The adolescent must be able to actively navigate his/her way to resources such as positive relationships, skills that develop self-esteem, quality education, and also in participating in community and family affairs. On the other hand, the adolescent's family and community must also be available for resources to be found. A process of negotiation is necessary to make sure that the resources provided are meaningful to those requiring support (Ungar *et al.*, 2008:168).

## 2.3 Critical overview of resilience research

As research developed the description of resilience has also changed, therefore it is important to understand the change that the definition of resilience has undergone. Resilience, defined as both a process and an outcome qualified by positive adjustments to adversity, is a rather new and particularly complex concept (see Figure 2.1) (Theron & Theron, 2010:1). In the 1980s researchers like Garmezy, Masten and Tellegen (1984:97) observed that a number of vulnerable at-risk children showed adaptive behaviour. The researchers began focusing more on *stress resistance* and began to investigate what factors protected vulnerable and at-risk adolescents against maladjustment, as a result of this new research on resilience began (Theron & Theron, 2010:1). However, this focus progressed, as summarized in Figure 2.1 below.

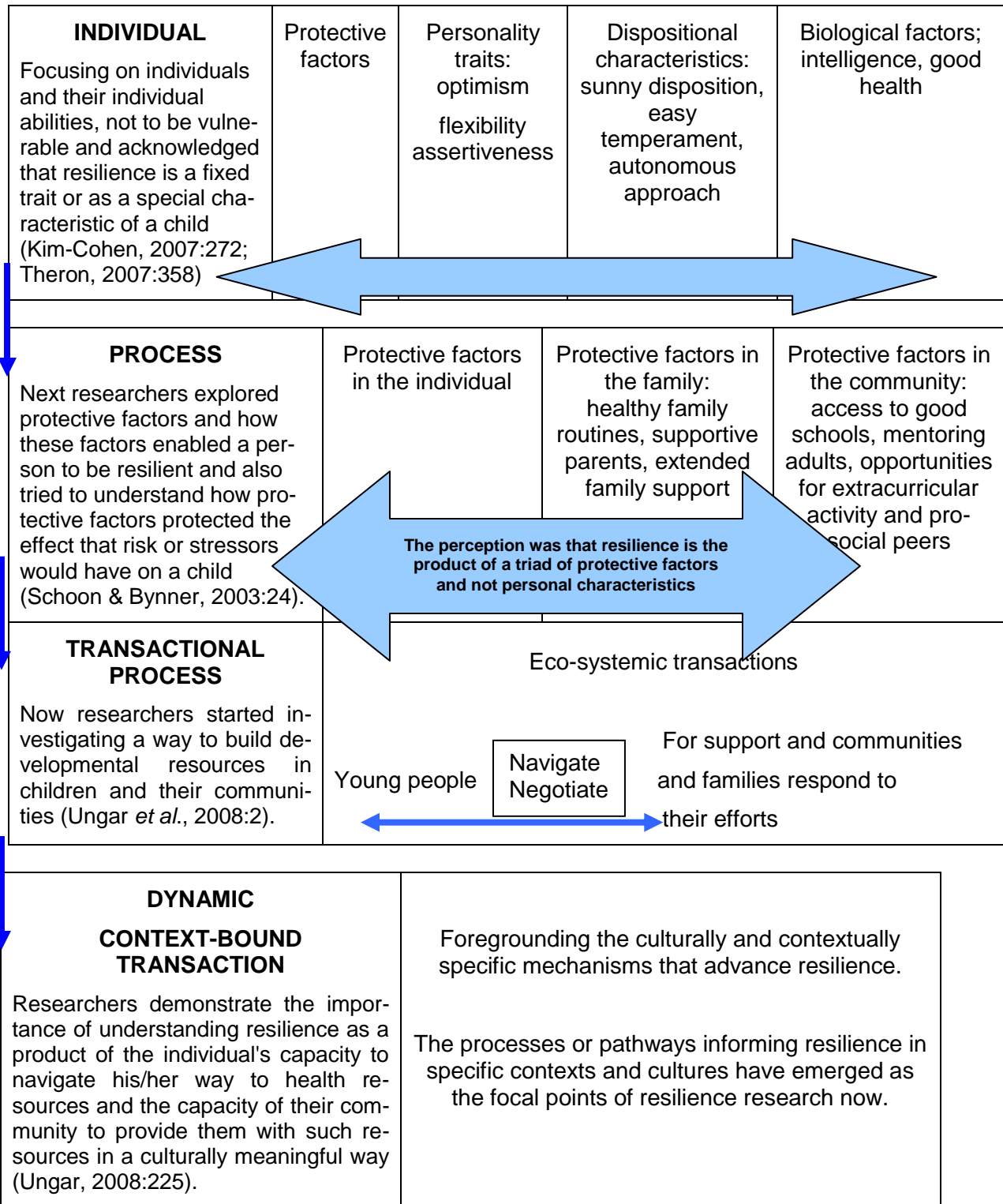
In summary, resilience progressed from being understood as a quality of the individual to being understood as a dynamic, context-bound phenomenon. Resilience has developed as a dynamic process between children and their community (Ungar, 2008:225) and thus it is important to discuss the protective resources that play a role in this process.

## 2.4 Protective resources

*Protective processes* refer to how protective factors work in order to mitigate the impact of risks, in theory, these are the processes by which good outcomes happen when development is in danger (Masten & Reed, 2005:77). Thus protective resources are circumstances or processes that positively work together to ease risks or adversity.

As already noted, according to Ungar (2008:225) and Ungar *et al.* (2008:2) the wellness of adolescents depends on their ability to cooperate, negotiate, and live in harmony with other people, but also on the availability and accessibility of linked protective resources. In order to navigate towards and negotiate for resilience, adolescents need certain individual resources that will facilitate this. They need a family, a community and a culture that will support them in their journey to resilience and that will return what they negotiate for, so resilience is a product of the constant interaction between intra-personal and inter-personal factors (Masten & Reed, 2005:85; Ungar, 2008:225).





**Figure 2.1: The development of resilience research** (Adapted from Theron & Theron, 2010:2)

### **2.4.1 Individual characteristics contributing to resilience**

According to a review of resilience-focused research done by Theron and Theron (2010:2), South African studies to date have reported particular personal qualities linked to resilience include: goal or achievement orientation, empathy, optimism, autonomy, conservatism, conscientiousness, self-regulation, sociability, enthusiasm and assertiveness. Additional to the personal qualities, a few resources were also noted to secure resilience: problem solving skills, positive cognitive appraisal, an internal locus of control, a sense of self worth and a preference for socially or system-appropriate behaviour. Several individual characteristics are described below.

- **Self-efficacy**

Self-efficacy beliefs are defined as “people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances’ (Bandura, 1986:391). The ability to learn from experiences and failures which are related to self-efficacy are considered a characteristic of a resilient adolescent (Ungar, 2008:227). Adolescents also learn from other adolescents’ experiences and failures and develop self-efficacy which is an essential protection against adversity (Killian, 2004:52).

- **Autonomy**

Linked to self-efficacy, autonomy (Killian, 2004:52; Schoon, 2006:79) can renew hope and build assertiveness (Boyden & Mann, 2005:7). A difficult situation becomes less threatening when the adolescent feels more competent in his/her ability to cope. Schoon and Bynner (2003:24) also comment that without a strong sense of autonomy or internal locus of control adolescents can feel powerless. These adolescents might feel that forces outside of themselves control and shape their lives. Usually resilient adolescents are resourceful and flexible and can be independent when necessary, and this resourcefulness is what sets them apart and makes them feel that they are in control of their own lives (Schoon & Bynner, 2003:24).

- **High self-esteem**

Adolescents with high self-esteem have positive feelings about themselves, their social environment and their ability to deal with life's challenges and to control what happens with them (Bannister, 2007:86). Brooks (2005:300), Rutter (2000:671) and Theron (2004:319)

describe an adolescent who has a positive self-esteem as somebody who easily comes to terms with and understands and accepts his/her own potential and limitations, and tries to be the best person in spite of difficulty. Masten and Powell (2003:13) agree that adolescents who have a positive view about themselves have a high self-esteem can be considered to possess a protective characteristic. Ungar *et al.* (2008:6) notes that a positive high self-esteem is often associated with resilient adolescents. A high self-esteem encourages adolescents not to stay or level with negative effects or failure, but to face new or difficult circumstances with confidence (Greener, 2006:44).

- **Intellectual capabilities**

Fergusson and Lynskey (1996:281) note that possessing intellectual capabilities, especially good verbal and communication skills, is necessary for resilience. Van der Bilt-Adriance & Shaw (2008:34) claims that child intellect has regularly been found to predict a range of positive outcomes, including academic achievement, pro-social behaviour, and peer social competence as well as the absence of antisocial behaviour and other types of psychopathology. There are several reasons why intelligence is important in high-risk situations. Adolescents with high intellect may be more likely to have successful information processing and problem-solving skills, which allow them to compete with the stresses and challenges they come across. Therefore adolescents with higher intellectual skills should also perform better at school; increased academic success is associated with the adoption of social norms and integration into pro-social peer groups (Van der Bilt *et al.*, 2008:34). Masten, Best and Garmezy (1990:432) found that more intellectually able adolescents may be able to quickly and accurately distinguish between danger situations, find havens, and locate sources of help. Consequently they adapt better in the face of adversity.

- **Temperament**

Adolescents who have a positive temperament usually prove to be academically motivated, show less discipline problems, have a good self-esteem, have positive relationships with peers and are commonly known to be more at ease (Hein, 2004). Having a positive temperament can often help an adolescent to adapt to stressful life events and therefore be more resilient than their differing peers (Isaacs, 2002:330). Also Reber and Reber (2001:740) describe temperament as an adolescent's general nature or particular patterns of mood swings, levels of sensitivity and emotional reactions.

- **Problem-solving skills**

Resilient adolescents who have problem-solving skills typically have a keen sense of curiosity that promotes their enthusiasm for problem solving (Brooks & Goldstein, 2004:251). Resilient adolescents have the capacity to look at any problematic situation and try to solve the problem with perseverance and optimism (Palmer, 2007:27). Wong and Lee (2005:317) identified optimism as a protective factor. Resilient adolescents also have the ability to identify people to whom they can navigate and who will help them solve problems (Ungar *et al.*, 2008:2). Either way, depending on the adolescents own capabilities for problem-solving he/she could either cope with through humour, unselfishness or by focusing his/her attention elsewhere, or he/she could withdraw from the problem (Schoon & Bynner, 2003:24).

- **Sense of humour**

Having a sense of humour can help an adolescent cope with whatever difficulty he/she is faced with (Brooks & Goldstein, 2004:123; Masten & Reed, 2005:83). A sense of humour can ease the weight imposed by adversity and provide much needed relief (Malindi, 2009:42). In research done by Malindi and Theron (2010:322) participants (street children) stated that when they teased each other and laughed, they forgot about the stresses they faced and that it diverted their thoughts away from worries and risks. To be able to laugh at one self and relieve stress in this way can be seen as a protective factor.

- **Emotionally competent**

Van der Bilt-Adriance and Shaw (2008:34) and Early and Vonk (2001:18) describe emotional competence as observing, evaluating, and modifying the strength and duration of emotional reactions to accomplish goals. Through effective communication skills adolescents can express their needs, thoughts and feelings. For example when an adolescent navigates towards family, can talk to them and feel that they understand, this often encourages emotional expression. Such as adolescents is also able to negotiate emotionally harmful experiences and avoid feeling overwhelmed and helpless in the face of adversity and difficulty. Killian (2004:45) states that an adolescent is seen as being emotional competent when he/she has the ability to express, assess and recognise emotion accurately and more importantly to regulate his/her emotions so that the adolescent can encourage their emotional and intellectual growth. Emotional strength as well as emotional intelligence adds to an adolescent's resilience (Edward & Warelow, 2005:101).

## **2.4.2 Protective resources in the family**

Family protective resources are those that shape the family's ability to endure in the face of risk factors (Seccombe, 2002:388). A healthy family life includes the extent of the family's organizational structure (which refers to a family's unity, harmony, agreement, care giving and expressiveness and conflict), interpersonal relationships, parent psychological status, and parent self-efficacy (Armstrong, Birnie-Lefcovitch & Ungar, 2005:270). Several familial resources are discussed below.

- **Parents**

Parents play an important role in promoting family resilience. Research has shown that having caring, supportive parents can help adolescents deal with adverse circumstances (Killian, 2004:52; Ungar, 2004:36). Masten (2001:230) found that effective parents probably try to keep away from as many risk factors as possible for their family: as a result it is not surprising to find that adolescents with skilled and effective parents are exposed to fewer adverse life events. Adolescents who come from a warm family environment are more apt to be resilient and resourceful when handling stress and traumatic events. Psychological stresses are reduced in adolescent children who come from a stable and secure family (Kumpfer, 1999:189-191; Boyden & Mann, 2005:68; Masten & Reed, 2005:85).

Reliable and consistent parenting styles that encourage a warm, communicative relationship between adolescent children and parents help to promote resilience. When parents are firm and reasonable, adolescents have a better judgment of where they stand and a greater sense of fairness. Firm, reasonable parents also create an environment that is predictable and this encourages resilience (Fergusson & Lynskey, 1996:289; Boyden & Mann, 2005:7; Masten & Reed, 2005:83).

- **Family characteristics**

Family characteristics such as parental harmony and good, quality parenting and relationships which include consistency, conflict management, healthy communication, warmth, structure, supervision and monitoring of family relationships, as well as high expectations and socio-economic advantages provide adolescents with stability and a sense of security which in turn encourages resilience when circumstances are difficult (Rutter, 1999:136; Kritzas & Grobler, 2005:2; Masten & Reed, 2005:83; Armstrong, Birnie-Lefcovitch & Ungar, 2005:274).

- **Supportive family**

A supportive family is believed to encourage resilience. The ultimate goal of family support is to meet the needs of adolescents within the family. By being receptive to an adolescents needs (love, attachment, moral, emotional and financial support) parents encourage resilience (Cook & Du Toit, 2005:248; Masten & Reed, 2005:75; Schoon, 2006:80). Supportive familial factors have a positive influence on an adolescent (Wong & Lee, 2005:316). One way this happens is when parents develop a close bond with the adolescent and his/her siblings. Close bonds encourage a sense of cohesion and belonging which in turn enable resilient functioning. In the South African context close family support depends a lot on the support from extended family, which leads to a wider informal network of supportive relationships (Dass-Brailford, 2005:582; Cook & Du Toit, 2005:248; Theron, 2007:359).

- **Extended families**

Extended family such as relatives or grandparents can have a positive influence on an adolescent experiencing adversity. Cook and Du Toit (2005:248) describe extended families as being able to provide a social support network which in turn provides an important source of aid to adolescences belonging in a particular family. As adolescents search for their own identities, for example grandparents can provide them with cultural and family knowledge (Gouws, Kruger & Burger, 2000:74; Dass-Brailford, 2005:582). Extended family like aunts or older cousins can provide the adolescent with additional emotional or even material support and this often encourages resilience (Dass-Brailford, 2005:582; Cook & Du Toit, 2005:248).

- **High expectations**

Schoon and Bynner (2003:24) report that another factor associated with positive adjustment are parents who show interest in their child's education and want their child or adolescent to continue with education after the minimum school leaving age. A supportive family environment is furthermore characterised by parents who read to their child, visit the school and talk to the teachers about their progress, and who participates in joint activities. These parents have high expectations for their children or adolescents even though they themselves had not been able to attend or complete high school. The sacrifices made by these parents usually do not go unnoticed by motivated learners (Dass-Brailsford, 2005:582). When families have positive expectations of their adolescent and when the family is committed to helping the adolescent

develop ability and skill, also regarding scholastic skills, even in adverse circumstances, resilience is encouraged (Donald, Lazarus & Lolwana, 2006:174).

- **Family traditions**

Time shared with one's family can contribute to resilience. Family traditions and routines are recommended as an important aspect that contributes to healthy families, adaptability and organisation of family life. Family routines are essential when it is necessary for rebuilding a family, including family identity and values when experiencing adversity. According to Hutchinson Afifi and Krause (2007:25) family routines are needed to create and support stability and consistency in the family environment, especially when adolescents have to face adversity in their lives. Through a family's influence on their adolescent's support structures, for example, by making them more aware of religious and church related organisations, parents contribute indirectly to contributing to resilience (Wang, Haertel & Walberg, 1994:20). When a family has a strong, consistent, and dependable value system in the form of a religious belief or a consistent set of (high) expectations, rules, and structure within the family, it serves as a protective factor for an adolescent (Masten, Best & Garmezy, 1990:432; Donald *et al.*, 2006:174).

Ungar (2010:8) quotes Bauman's argument about the liquidity of structures, for example family structures, like liquid that can change shape naturally, now some people rely less on these structures (family) to guide their lives. The successful adolescent or family is those who function according to a set standard and value the opinion of other people, e.g. community leaders, social workers, teachers (Ungar, 2010:13).

### **2.4.3 Environmental protective resources**

Environmental protective resources form part of interpersonal protective resources that are believed to promote resilience (Thomas & Menampampil, 2005:335). Resilient adolescents need to navigate their way to interacting with or connecting themselves to health-promoting people and structures within their community (Ungar *et al.*, 2008:2). An adolescent functions in an environment that consists of a variety of different structures and role-players, including community-based institutes (e.g. school, church, clinics etc) that hopefully form a network that supports adolescents (Greener, 2006:42). Resilient children and adolescents are thought to make use of protective resources within their environments more efficiently than their peers (Ungar, 2008:225; Ungar *et al.*, 2008:6). Adolescents who face hardship often rely on their

community to provide them with positive protective resources in order to cope resiliently. A community should be able to provide safe facilities like libraries, clinics, transport, shops and recreational services for the use and benefit of all members of the community (Dass-Brailsford, 2005:579). However, Dass-Brailsford (2005:579) found that in the South African community where she had done her research these facilities were limited or non-existent. If the norms and structures provide a supportive network and encourage positive social bonding opportunities between the individual and the community, the community in which an adolescent grow up should have a good influence on adolescents (Kumpfer, 1999:189-191). Through this shared value of '*ubuntu*' (meaning; a person is a person through other people) the development of resilience becomes priority (Veeran & Morgan, 2009:59).

- **Positive supportive network**

Adolescents who cope with hardship often rely on their community to provide them with positive supportive protective resources in order to cope resiliently. Krovetz (1999:2) notes that a resilient community is a community with high expectations, purposeful support and one that offers on-going prospects (good management and control from the community) for meaningful participation, like opportunities to participate in sport (e.g. soccer or karate clubs) or the celebrating of different cultural events so that the positive effect of the involvement is significant and long lasting on the lives of these adolescents (Luthar & Zelazo, 2003:529). When adolescents have positive or warm relationships with supportive individuals like family members, social workers, teachers and community leaders, these relationships provide opportunities for adolescents to trust and rely on others especially during difficult times (Killian, 2004:43; Masten & Powell, 2003:13; Boyden & Mann, 2005:7). In summary the community can provide adolescents with an opportunity to feel supported and valued and give them a sense of purpose (Boyden & Mann, 2005:8; Thomas & Menampampil, 2005:335).

Emotional support and back up that adolescents receive from the community develop resilience and enable the adolescent to ask questions. By feeling free to ask questions adolescents can access different opinions, guidance and support during hard times (Musick, Stott, Spencer, Goldman & Cohler, 1987:229; Copeland, 1997:53; Williams, 2002:200; Boyden & Mann, 2005:7). Not only do these adolescents gain valuable advice (from community leaders or support groups), but adolescents who live in communities that provide room for questioning and inquiring, usually feel supported. Adolescents, who have opportunities to learn to trust others,



mostly feel comfortable and are able to manage the stressful situations with the help of others (Reed-Victor, 2003).

When adolescents are supported by their community they get a sense of belonging. Wong and Lee (2005:316) describes this sense of belonging as an involvement and contact between adolescents and their families, peers, schools and communities (Gorman-Smith & Tolan, 2003:401; Boyden & Mann, 2005:8; Wong & Lee, 2005:316). This sense of belonging, which these adolescents feel gives them the necessary support and direction on their path to be resilient (Luthar & Zelazo, 2003:529; Wong & Lee, 2005:316). When adolescents receive support from their community, this often gives adolescents the confidence to know that they can turn to adults for nurturing, guidance and support in whatever situation they find themselves in (Musick, Stott, Spencer, Goldman & Cohler, 1987:229; Copeland, 1997:53; Boyden & Mann, 2005:7; Williams, 2002:200).

To have a strong relationship with pro-social peers or friends can be seen as protective processes outside the family environment (Boyden & Mann, 2005:7). Peer relationships provide children with a good foundation of social support outside the immediate and extended family settings (Malindi, 2009:51). These relationships enhance resilience as it gives the adolescents the freedom to talk freely about problems that they are faced with (Williams, 2002:200; Masten & Powell, 2003:13; Boyden & Mann, 2005:7). Adolescents find it easier and more comfortable to talk to peers who are faced with similar adversities. Adolescents find it easier because they can relate to each other's situations by asking for advice or help and even offering advice becomes easier. Adolescents realise that whatever emotions or experiences they share with others, are valued and accepted (Copeland, 1997:55; Walker, 2001:7).

#### ❖ **Community structures**

A community that offers the adolescent effective police services or accessible health services (e.g. clinics within walking distance) enables the adolescent towards coping more resiliently because support is within their reach (Masten & Powell, 2003:13).

Community structures like churches, schools, recreation and sport clubs, usually offer adolescents role models and mentors who can encourage them towards resilience (Masten & Powell, 2003:13). Religious leaders, educators, school therapists, sports coaches, and other adults (e.g. the hawker selling fruit and vegetables, the taxi driver) who possess social competency are some of the people an adolescent might feel comfortable to approach. These

people may be role models and also form a support network for the adolescent (Van Rensburg & Barnard, 2004:4; Masten & Reed, 2005:83). Sometimes this sense of support and the influence of positive role models help adolescents to form more positive self-concepts and to aim towards positive goals (Donald *et al.*, 2006:175). Adolescents need role models that live out positive values and problem solving skills as this helps adolescents to develop coping strategies (Greener, 2006:4546). Most adolescents are apt to do well when resources are made available and stressors removed. Individual capacity is far less important than the quality of the adolescent's social environment, yet the decisions as to which and how resources are provided is by no means a given exercise (Ungar, 2010:425).

### ❖ **School**

An adolescent's community must have and encourage access to school and education, information and learning resources (libraries) (Strumpfer, 2003:71; Masten & Reed, 2005:84; Ungar & Liebenberg, 2005:218-219). A resilient school which can function well under stressful conditions, manned by teachers and role models who can function effectively in the midst of adversity, can play an essential role in promoting resilience among high-risk adolescents (Malindi, 2009:52). However, in their research Gizir and Aydin (2009:42) found that the basic characteristics in poor communities do not help adolescents adjust and survive successfully in the school environment because what learners experience in the home and community environment may not be workable and desirable in the school, e.g. lack of examples of good behaviour and discipline, obedience and respect towards adults and authorities. Specifically in South African townships and informal settlements it may occur that some adults with low levels of educational and occupational achievement grouped together may serve as poor role models for adolescent's school performance (Newman, 2002:2; Dass-Brailsford, 2005:578-580). But they might encourage their children to learn so that they are not like them in future. A majority of successful children come from such poor families with illiterate parents.

Murray (2003:24) found that among the school level variables thought to apply the most dominant influence on resilient adolescents are close and caring teacher–student relationships, the promotion of self-esteem and self-determination, a consistent focus on academic skills, the active teaching and modeling of appropriate social and behavioural skills, and school-home involvement. Adolescents spend most of their day time on the school grounds, this means that schools can choose to become agents of resilience when they purposefully promote healthy teacher-learner relationships, healthy relationships among learners, participation in worthwhile

school and classroom activities and a nurturing environment (Johnson & Lazarus, 2008:19). Through programmes presented by die school, learners can also learn extra skills (like study skills, coping skills and work skills) that will help them on their pathway towards resilience (Greene, 2002:5; Johnson & Lazarus, 2008:19).

Teachers that show that they care are also thought to support learners to feel a positive connection to their school which in turn helps them feel that they belong and are of importance (Johnson & Lazarus, 2008:20). One of the resources that can improve resilience among adolescents at a school is a range of effective teaching methods which allows the teacher and the learner to form relationships necessary to encourage and give hope to an adolescent (Johnson & Lazarus, 2008:19; Vakalisa, 2002:17-23). Healthy relationships with adolescents can be formed by a teacher showing empathy, being sympathetic and also aware of problems that influence an adolescent's behaviour (Gouws *et al.*, 2000:97). Healthy relationships also give the adolescent the opportunity to have someone listening to their problems. Listening is part of the dynamic process of communication (Wright, 2006:64). A way in which listening can help is that it shows the adolescent that what they are saying is of relevance and this in turn encourages them to communicate freely (Velazco, 2006:75). Listening can thus be a very important instrument that teachers can use to show adolescents that they matter and to encourage their resilience.

For an adolescent to develop holistically, skills, knowledge, attitudes (positive) and values are required. There are Learning Areas (subjects) in schools like Life Skills (part of the Life Orientation learning area) which provide adolescents with a variety of tools to be successful in life. From the South African perspective Life Orientation can prepare adolescents for life's challenges by teaching and training them to gain knowledge, skills, values and attitudes that can function as a shield to risk (Theron, 2007:360). Through the Life Orientation lessons adolescents are empowered towards the finest possible holistic development, with useful obtained tools, which include: problem-solving skills, critical and creative thinking, coping skills, emotional and communication skills and an area for self discovery (Donald, Lazarus & Lolwana, 2006:273; Theron, 2007:360).

For adolescents living in child-headed households, schools can provide a nurturing environment and be their source of love, care and support through teachers who can be the substitute for absent parents or caregivers in the lives of these adolescents (Dass-Brailsford, 2005:583; Theron, 2007:372). Teachers who have a resilience-building approach and who recognise the

strengths of the learners can create a health-promoting environment of caring relationships in schools and this is essential for resilience to develop in adolescents (Malindi, 2009:51).

#### **2.4.4 Cultural protective resources**

Resilience is an outcome of the interaction between an individual and the environment, meaning that the community is providing health resources and, importantly, providing opportunities to access these resources in a culturally appropriate way (Cameron, Ungar & Liebenberg 2007:285; Ungar, 2008:2).

A close inspection of the relationship between different cultural practices, based on family relations, relationship ties and extended family systems including caring and supportive networks, can provide insight on how adolescents are involved or exposed to risk in challenging societies (Veeran & Morgan, 2009:55). Where there is good community support shared with family culture and tradition which serve to strengthen protective factors it can contribute to developing resilience (Veeran & Morgan, 2009:58).

When defining culture, a selection of variables must usually be taken into consideration, such as beliefs, values, skills, rules, methods of interaction and adaptive behaviour passed on from one generation to another in a particular society. Frequently these variables can be seen in the way that a particular society with a certain culture live their lives, for example their family life, patterns of behaviour, beliefs and language (McCubbin & McCubbin, 2005:40; Palmer, 2007:29). A culture that emphasises interdependence, co-operation and mutual assistance as important values, and that provides opportunities for adolescents to form bonds with healthy adults, encourages resilience (Masten & Reed, 2005:84; Ungar *et al.*, 2008:3).

- **Family life**

Culture can have an intense impact on an adolescent's family and community life. Culture can, for example regulate the age at which one should get married and whom they may marry. This is done through family traditions, beliefs and values passed down from one generation to the other (Walsh & Crosser, 2000:306; McCubbin & McCubbin, 2005:32; Walsh, 2006:51).

Veeran and Morgan (2009:61) found that different notions of adversity and perseverance can be considered as valuable cultural constructs for resilience. "For example in African culture, patriarchy accounts for the male's dominant role in meeting the family's basic needs irrespective

of whether one is employed or not. Males are socially pressured 'not to lose face' and to be seen to be a respectable member of the community can be positive from both a cultural (collective) perspective and from the developmental (individual) perspective as an attempt to fulfill role expectations. Structural factors, such as the absence of a substantial social security system in South Africa intensify the pressure of the patriarchal role" (Veeran & Morgan, 2009:61).

Te Vaarwerk (2009:35) found in her research that when an adolescent experiences instability, cultural practices (like the extension of traditional rituals and routines) embedded in the supportive extended family offer stability and tradition. Adolescents, who are attached to a family and community environment, can continue to use positive coping techniques and ways of socialising that are exercised within their culture. Reliable and constant support between an adolescents' culture and traditions and culturally suitable support within their community are important for enhancing resilience. Adolescents, who experience continuation of traditional rituals and routines, form a grounded sense of identity and can cope more resiliently with life's challenges (Te Vaarwerk, 2009:35).

- **Religion and faith**

Holding on to cultural traditions can contribute to an adolescent's sense of purpose, aspirations, beliefs, and values, as well as spiritual and religious identification (Ungar *et al.*, 2008:6). When cultural traditions encourage rituals that will help adolescents to accept and cope with change, resilience is promoted (Masten & Reed, 2005:84).

Adolescents also rely on religion or faith (which is normally a cultural practice) and most adolescents feel that this allows them to cope (Boyden & Mann, 2005:8; Te Vaarwerk, 2009:36; Killian, 2004:46; Kumpfer, 1999:199). Dass-Brailsford (2005:583) explains in her study that black adolescents that trusted cultural beliefs (ancestral worship) coped adaptively with adversities because they did not feel alone and felt looked after. Religious practices, such as the respect towards ancestors, are important in shaping the lives of Black youths living in difficult circumstances (Mazama, 2003:6-13). Such a faith provides comfort and the belief that these ancestors are watching over these adolescents and will not abandon them during difficult circumstances (Dass-Brailsford, 2005:583).

In a study done by Dass-Brailsford (2005:583) participants declared how their religion facilitated resilience, mostly by helping them to feel strong and in control. They felt that prayer made them

tough and that their beliefs in a 'higher power' can direct their lives and give them the inner strength to seek help in the community like resources such as shelters or soup kitchens. Attending church services helped these resilient adolescents to shape their behaviour and also served as a source of moral support.

Religious gatherings provide adolescents with alternative supportive role models and individual guidance (counselling) (Thomas & Menampampil, 2005:332, 333). These gatherings further develop resilience through a sense of belonging (Oliver, 2007:29). Phasha (2010:1238) noted that in communities where Black people are in a minority and adolescents are at risk of having their motivation in school affected by, for example racism, church serves as a safe place. This 'safe place' in the community can promote social interaction and nurturance to resilient adolescents. Here these adolescents are exposed to the hopeful, loving and unrestricted message of the Christian gospel. Adolescents will while mixing with other people, be able to apply biblical concepts to their own lives and to develop positive and accepting relationships with adults.

In Phasha's (2010:1248) research she refers to Sanchez and Carter (2005) and Kasambala (2005) and reports that an African child is brought up with exposure to religion (socializing in a church community), spiritual convictions, and a belief in God or a higher power. Therefore to turn to religion when searching for answers to life events is ordinary for these adolescents. God or a higher power is then seen as having power over life and death and in the occurrence of any event in an adolescent's life is likely to be understood as His (God's) doings and is not an individual's responsibility. It is for that reason that this cultural heritage becomes a major source of strength when facing a stressful event or time (Phasha, 2010:1248; Dass-Brailsford, 2005:583). Malindi and Theron (2010:323) found in their study among street children that their (street children) prayer and their belief in a higher power guided their lives and they felt that this helped them navigate towards community resources.

- **Sense of belonging**

When an adolescent acknowledges cultural norms and practices, it is easier to feel rooted and grounded in the community, which in turn encourages a sense of belonging and resilience. In this way an adolescent is provided with the necessary resources to cope effectively in difficult situations. By also being proud of one's cultural background means showing a sense of identity, function, worth and confidence. This in itself can be a protective factor that helps to develop an

adolescent's resilience. For an adolescent to be resilient he/she has to be culturally grounded in knowing where he/she comes from and that he/she is part of a cultural community tradition that is expressed through daily activities (McCubbin & McCubbin, 2005:40; Ungar & Liebenberg, 2005:218-219).

- **Cultural values**

Malindi (2009:54) reports that when cultural values are taught to adolescents and when they accept the worth of such values resilience is encouraged. As a result, naturally occurring relationships or connections to cultural groups or clubs, faith-based organisations, non-governmental organisations and extracurricular activities that promote cultural knowledge and activities are important resilience resources that play a role in promoting a sense of belonging, the learning of values and norms, and in enabling children to enjoy their cultural heritage (Ebersohn & Eloff, 2001:15; Gilligan, 2004:98; Killian, 2004:52; Malindi, 2009:54).

Phasha (2010:1249) found in her research on sexually abused adolescents and young woman that these abused adolescents and young woman were determined to stay in school, even under bad conditions. These conditions would have driven others to leave school but gives an insight on two important values common to Africans: self-knowledge and a belief in the self or self-regard. She quotes Miller and MacIntosh (1999) that a strong sense of ethnicity or self-identity provides adolescents with the ability to beat a difficult situation that can pose a threat to their academic performance. A belief in self helps young African adolescents to think well about them and encourages a belief that they are worth something. They do not give up easily when faced with difficult situations, but are able to direct their future with self-confidence and self-determination, and develop different strategies and ideas to pursue academic goals (Phasha, 2010:1249).

In her research study, on the role of culture in the lives of adolescents, Rogoff (2010:910) found that adolescents go to school with practices that are familiar in their communities; these practices will guide them in what is important to learn in school and how to learn it. Additionally, teachers go to school with their own values and methods of teaching also influenced by their communities and their own history of involvement for example their experience of teaching in a Western school in contrast to teaching in a more culturally orientated school. In the South African context these differences are so valuable in the approach between teachers and learners, especially when learners from townships attend former Model C schools in a town or

suburb. Rogoff (2010:910) found that adolescents from communities with indigenous family traditions may have to combine several methods of learning on their list in order to succeed in school. This may be both a challenge and an opportunity for adolescents as well as for schools, because being able to learn in numerous ways will probably be useful in later life and also in other circumstances.

#### **2.4.5 Reciprocity of resources**

For an adolescent to show any resilience he or she has to face adversity or risks in life and respond adaptively to these risks. These risks which adolescents face can include amongst many other things crime, abuse, poverty, parental death, illness (Palmer, 2007:46). For adolescents growing up in the townships of South Africa, the presence of risk is commonplace and often escalates on a daily basis (Palmer, 2007:46). Although risk processes are intimidating and threatening, a positive aspect develops from this, the possibility for resilient behaviour to be found in such negative conditions (Palmer, 2007:46).

Malindi and Theron (2010:319) state that in protecting the possible harmful effects of risk processes the role of ecological protective resources (such as supportive families, health-promoting schools, community organisations, cultural rites of passage) is known (Armstrong, Birnie-Lefcovitch & Ungar, 2005:269; Masten & Reed, 2005:89) along with the adolescents' role in navigating towards, and negotiating for, resilience-promoting resources. Resilience is based on an individual's capacity to navigate himself towards protective resources that are made available to him by his community in a cultural meaningful way (see Figure 2.2) (Schoon, 2006:17; Cameron *et al.*, 2007:297; Kim-Cohen, 2007:272; Ungar *et al.*, 2008:2-3; Palmer, 2007:46). An adolescent requires healthy protective resources (see Figure 2.2) to help him cope resiliently with adversity and the adolescent has to use and make the most of such resources. Cameron *et al.* (2007:297), Schoon (2006:17), Ungar *et al.* (2008:2-3) and Ungar (2008:225) make this very clear when redefining resilience as a dynamic give and take process that takes place between an individual and his/her ecology. Figure 2.2 visually summarizes the person-context reciprocity of resilience which includes the health promoting resources and the risks which adolescents might face.



# WIDER COMMUNITY

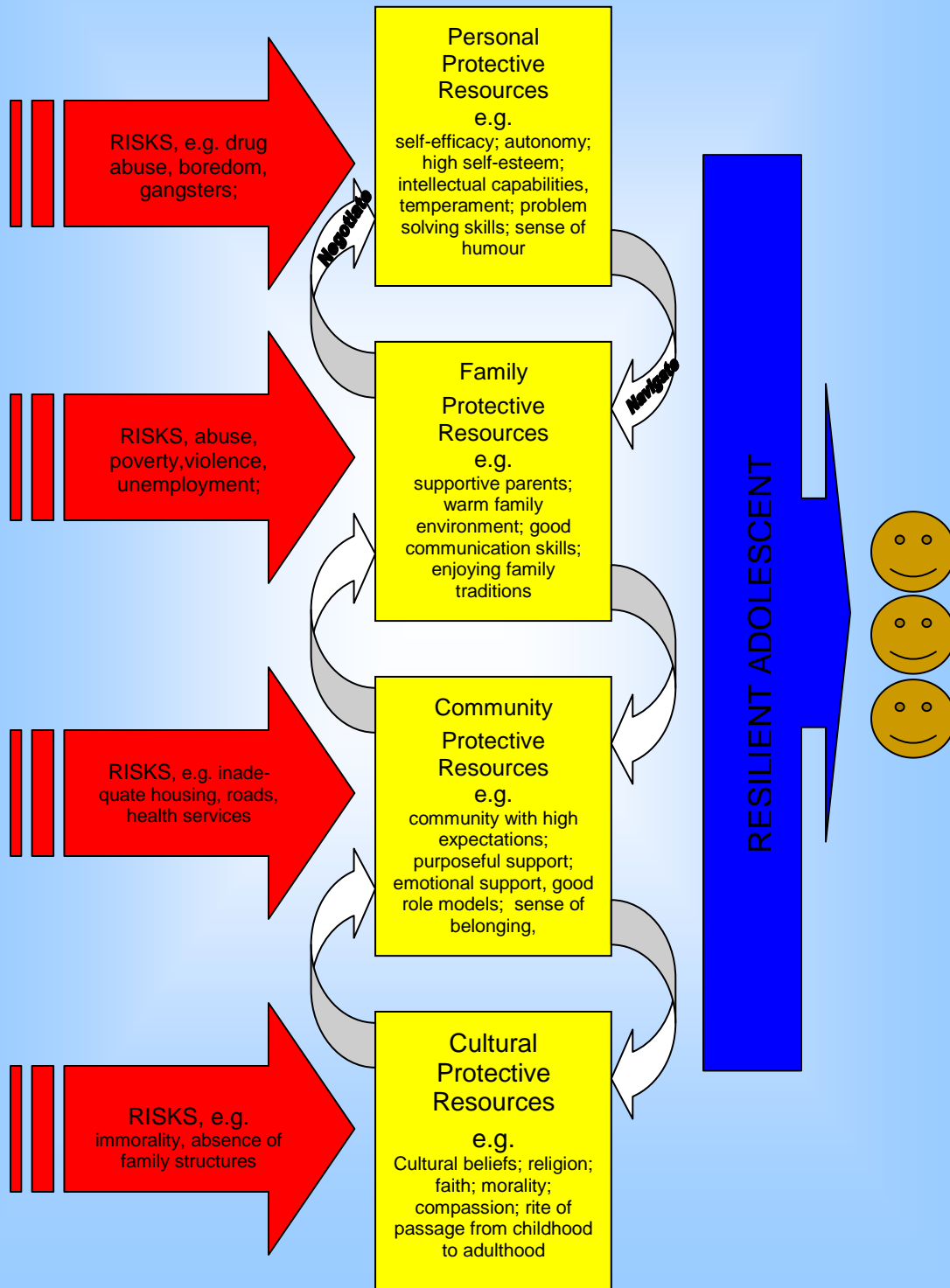


Figure 2.2: Reciprocity of resources (Donald, Lazarus & Lolwana, 2010:154-171)

## **2.5 Conclusion**

In this chapter the phenomenon of resilience was explored along with the capacity of adolescents to navigate their way towards resources that maintain health and welfare as well as also the ability of an adolescent's physical and social environment to provide resilience-promoting resources, and, finally, the ability of individuals, families, and communities to negotiate culturally meaningful ways to share resilience resources.

Based on the review of literature on resilience the assumption to be tested with this research is that there is a relationship between resilience and academic performance. In Chapter 3 Self-Regulated Learning and Academic Success will be discussed.

## CHAPTER 3

### SELF-REGULATED LEARNING AND ACADEMIC SUCCESS

#### 3.1 Introduction

In Chapter 2 a resilient child was described as one who bounces back having endured adversity, who continues to function reasonably well despite continued exposure to risk. Resilience is normal development under difficult circumstances. The assumption is that there is a relationship between resilience, self-regulation and academic performance. Although some learners could come from adverse backgrounds, it is important for schools and classrooms to attempt to foster the development of self-regulated learning.

Though there are several prominent theoretical perspectives on self-regulated learning e.g., operant, phenomenological, information processing, social cognitive, volitional, Vygotskian and cognitive constructivist perspectives, for the purpose of this study self-regulated learning will be discussed from a social cognitive perspective since there is a continuous interaction between personal, environmental and behavioural variables in a triadic fashion which are considered of importance for this study (Zimmerman & Schunk, 2001:9).

Self-regulated learning is an important aspect of learning and achievement in academic contexts. Learners who are self-regulating are much more likely to be successful in school (Pintrich, 2000:452). Bandura (1997, quoted by Alderman, 1999:136) warns though that pathways to goals and tasks are likely to be strewn with obstacles. Such obstacles should not be difficult to overcome by self-regulated learners as one of the most important aspects of self-regulatory capabilities is the potential for dealing with failure and building resilience to setbacks (Alderman, 1999:136). Alderman (1999:136) considers not the failure and disappointments as crucial, but the response to the setbacks.

The aim of this chapter is to give a broad outline of self-regulated learning from a social cognitive perspective. This chapter is structured as follows:

- Introduction (par. 3.1)
- Definitions of Self-regulated learning (par. 3.2)
- Self-regulated learning: a social cognitive perspective (par. 3.3)
  - Reciprocal interaction or triadic reciprocity (par. 3.3.1)

- Enactive and Vicarious learning (par. 3.3.2)
- Learning and performance (par. 3.3.3)
- Phases and sub-phases of Self-regulation (par. 3.4)
- Conclusion (par. 3.5)

## **3.2 Definitions of self-regulated learning**

From a social cognitive perspective Zimmerman (1989:329) defines self-regulated learning as the degree learners to which learners are meta-cognitively, motivationally and behaviourally active participants in their own learning. Pintrich (2000:453) who also approaches self-regulated learning from a social cognitive perspective defines self-regulated learning as “an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behaviour, guided and constrained by their goals and the contextual features in the environment”.

Zimmerman (2002:65) claims that self-regulation is not a mental ability or an academic performance skill. He (Zimmerman, 2000:14) describes self-regulation as “self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals”. Usher and Pajares (2008:443) define self-regulation as a meta-cognitive process that requires learners to explore their own thinking processes so as to evaluate the results of their actions and plan alternative pathways to success. Self-regulated learners act as agents, proactively engaged in their own development and activate their academic present and future.

Housand and Reis (2008:111) state that many researchers and theorists (Boekaerts, 1999; Winne, 1995; Schunk & Zimmerman, 2007; Zimmerman, 1989; Martinez-Pons, 2001) assume that learners who successfully self-regulate their learning are actively engaged in the process of gaining knowledge, are busy with learning tasks that allow them to strategically adjust their behaviour, personal variables and their environment to support the gaining of knowledge and goal achievement. These researchers also agree that learners' efficacy in the process of self-regulated learning differ based on academic context, personal effort, and performance outcomes.

## **3.3 Self-regulated learning: a social cognitive perspective**

According to the social cognitive perspective self-regulated learning relates to internal processes that determine behaviour in a particular situation: “Social cognitive theory focuses on

how people acquire knowledge, rules, skills, strategies, beliefs and emotions through their interaction with and observation of others” (Pintrich & Schunk, 2002:188). Learners are viewed as thoroughly integrated with the environment within which they are learning. The learners' cognitive responses, behaviours and environment all work together to foster learning (Inman, 2001:2). Based on learners' understanding of why it is important to learn something and their belief that they can accomplish the learning task, learners will self-regulate their learning and become proactive in their efforts to gain mastery (Inman, 2001:2).

The social component of this theory accepts that learners learn by being part of a community, while the cognitive component identifies the influence that thought or thinking processes have on the motivation and attitude towards a learning task (Pintrich & Schunk, 2002:143).

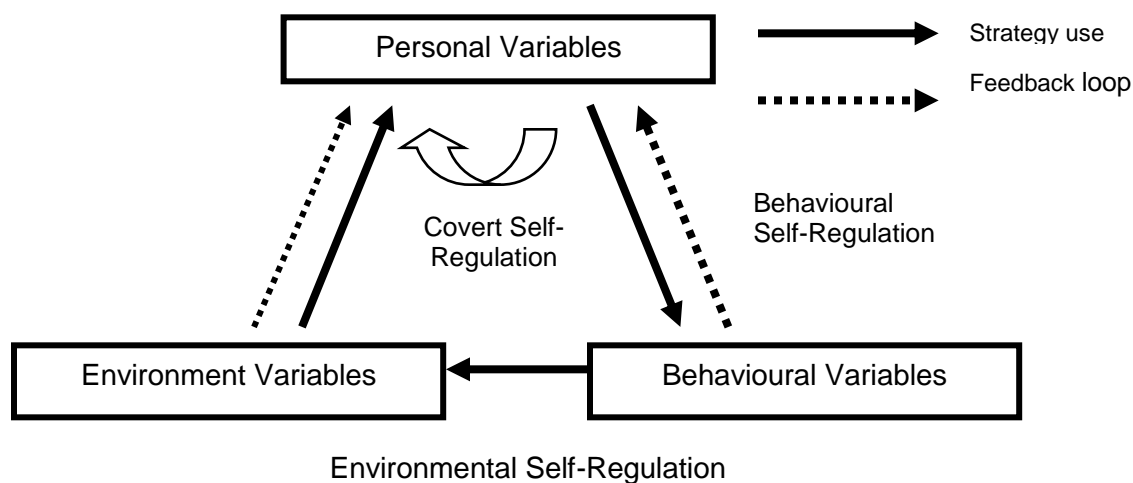
The social cognitive theory is based on three assumptions namely:

- Reciprocal interaction or triadic reciprocity
- Enactive and vicarious learning
- Learning and performance

### **3.3.1 Reciprocal interaction or triadic reciprocity**

Bandura (1986:18) describes triadic reciprocity as follows: “people are neither driven by inner forces nor automatically shaped and controlled by external stimuli. Rather, human functioning is explained in terms of a model of triadic reciprocity in which behaviour, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other” (see Figure 3.1).

Zimmerman (2000:15) proposed that in order to study self-regulation, it is necessary to consider three factors of the learning setting: the environment, personal variables and behavioural variables as these variables interact. Thus a self-regulated learner is one who is in continuous interaction with his or her surroundings as he/she attempts to accomplish some tasks. This interaction takes the shape of efforts at mastery of knowledge and attention to environmental feedback about task successes, and is followed by changes in task related behaviour on the basis of environmental feedback if necessary (Zimmerman, 2001:126; Martinez-Ponz, 2001:50).



**Figure 3.1: Triadic Forms of Self-regulated learning** (Zimmerman, 2001:14)

*Behavioural self-regulation* (see Figure 3.1) involves self-observing and strategically changing performance processes, such as the method of learning used by a learner, (e.g. making summaries or brain charts) (Zimmerman, 2000:14). *Environmental self-regulation* (see Figure 3.1) refers to observing and regulating environmental circumstances or outcomes and involves a learner's practical use of learning strategies to control the environment to make it more favourable for task completion (Zimmerman, 1989:330). Environmental self-regulation includes knowledge about the nature of particular tasks or more generalized knowledge about types of task as well as the processing demands that will be placed upon the individual (Jackson, 2004:395). This would involve, for example, choosing a quiet study spot with good lighting that it will improve concentration and focusing on tasks to be completed.

*Covert self-regulation* include knowledge about both cognitive and meta-cognitive strategies, as well as conditional (contextual knowledge) about when and where it is appropriate to use such strategies (Jackson, 2004:395). *Covert self-regulation* (see Figure 3.1) involves monitoring and adjusting cognitive and affective states, such as the strategies the learner employs to enhance remembering what was learnt or to relax (Zimmerman, 2000:14). The reliability and precision of learners' self-monitoring of these triadic sources of self-control directly influence the effectiveness of the changes they plan and the nature of their self-beliefs (Zimmerman, 2000:14).

### 3.3.2 Enactive and vicarious learning

Learning is a change in behaviour or behavioural potential brought about by intervening experiences (Schunk, 2001:127). According to the social cognitive theory learning can occur in two ways, namely enactive learning or vicarious learning. *Enactive learning* is learning by doing and experiencing (first hand) the consequences of one's actions (Pintrich, 2002:149). Actions that result in successes are likely to be retained; while those that are unsuccessful or leads to failures are discarded (Schunk, 2001:127). Learners selectively engage in cognitive activities that assist or help in learning and are motivated to discover actions that they value and believe will lead to worthwhile consequences or successes (Schunk, 2001:127).

*Vicarious learning* occurs in the absence of overt performance by learners and are drawn from observing models that are live (in person, e.g. a teacher or a role model), symbolic or nonhuman (e.g. talking animals, cartoon characters) on electronic sources (e.g. television, videotape, computer) or in print (Pintrich, 2002:149). Vicarious learning accelerates learning beyond what occurs when learners perform every action at the time it is learned and saves learners from personally experiencing negative consequences (Pintrich, 2002:149).

### 3.3.3 Learning and performance

Social cognitive theory distinguishes between the acquisition of knowledge (learning) and the observable performance based on that knowledge. People learn much by observing models, but the knowledge and skills they acquire may not be demonstrated at the time of learning (Pintrich, 2002:149). For example learners may acquire *declarative knowledge* (knowledge of a variety of learning tasks, of learning strategies and factual knowledge, e.g. that Gauteng is the smallest province in South Africa) *procedural knowledge* (knowledge of concepts, rules, algorithms and how to use learning strategies) and *conditional knowledge* (when to employ declarative and procedural knowledge and why it is important to do so) without demonstrating how well they have learned such knowledge at the time of learning (Schunk, 2001:128). A learner may learn about different types of structures in a Technology class but will only demonstrate such knowledge when he/she prepares a project about the different kinds of structures for the Science and Technology Expo.

### **3.4 Phases and sub-processes of self-regulated**

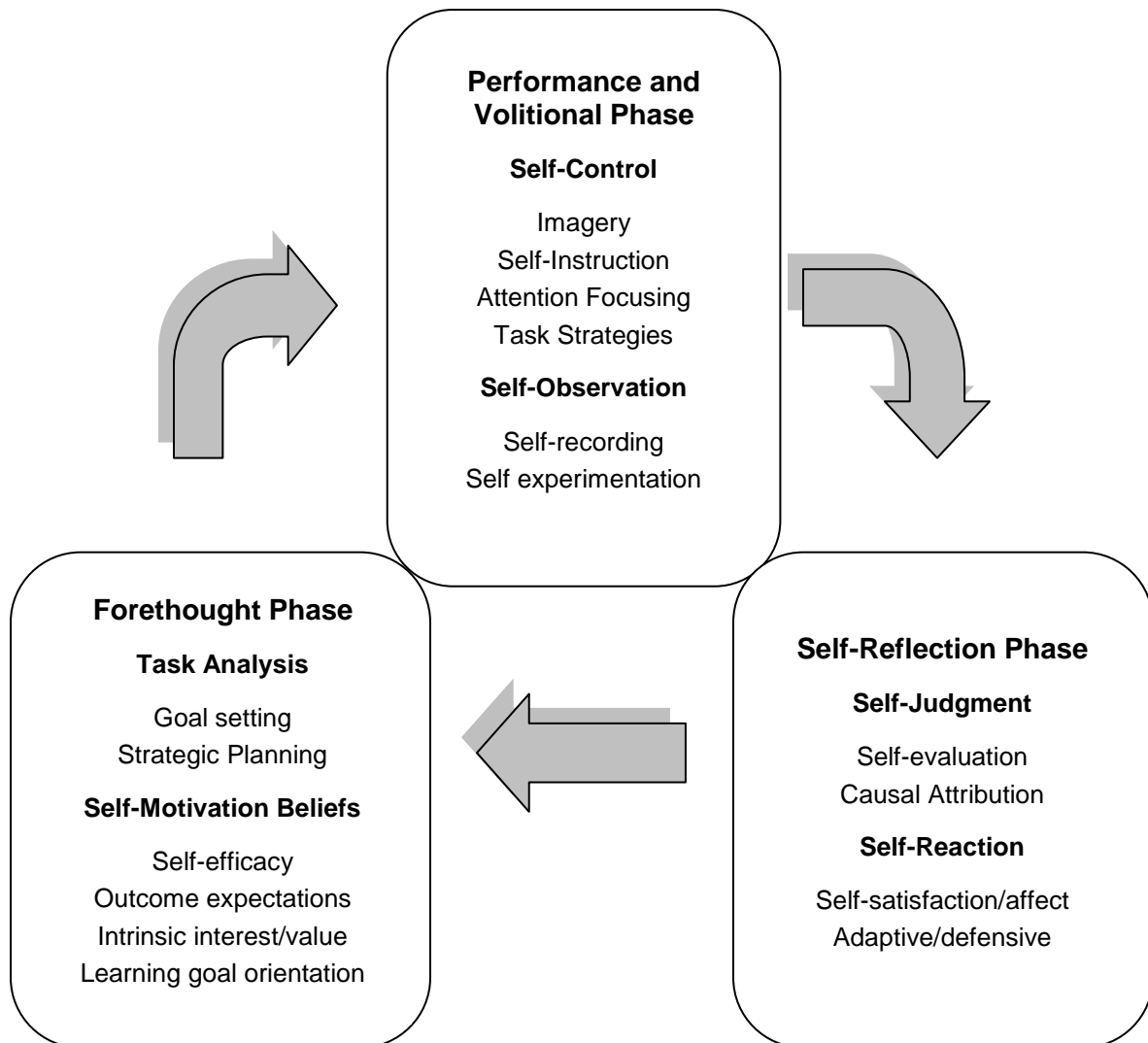
To support a better understanding of the structure of self-regulation and its relation to academic motivational beliefs, Zimmerman (2000:16) developed a cyclical model of self-regulation from the social-cognitive theory (Cleary & Zimmerman, 2004:538). Usually, self-regulated learners are proactive learners who integrate a variety of self-regulation processes (e.g., goal setting, self-observation, self-evaluation) with task strategies (e.g., study, time-management, and organizational strategies) and self-motivational beliefs (e.g., self-efficacy, intrinsic interest). It is understood that these learners will regulate their academic behaviours and beliefs in three cyclical phases: *forethought* (i.e., processes that precede any attempt to perform a learning task), *performance control* (i.e., processes occurring during learning efforts), and *self-reflection* (i.e., processes occurring after learning or performance) (Cleary & Zimmerman, 2004:538).

The *forethought* processes influence the *performance control* processes, which in turn influence *self-reflection* processes (see Figure 3.2). A cycle is completed when *self-reflection* processes influence *forethought* processes during future learning attempts. These phases are cyclical with the intention that feedback from previous performances is used to make adjustments during future learning efforts and attempts (Cleary & Zimmerman, 2004:538).

#### **3.4.1 Phase 1: Forethought phase**

The *forethought* phase initiates learning. This involves the beliefs, attitudes, and processes that a learner possesses before engaging in a school-related activity such as studying or taking notes in class. According to the cyclical model, these processes include *goal-setting* and *strategic planning* as well as a variety of underlying motivational beliefs such as self-efficacy, goal orientation, intrinsic interest, and outcome expectations (Cleary & Zimmerman, 2004:538). Through the exercise of *forethought*, learners motivate themselves and direct their actions in expectation of future opportunities (Bandura, 2001:7).





**Figure 3.2: Cyclical phases and sub-processes of self-regulation (Zimmerman, 2002:67)**

Two secondary categories of forethought processes are distinguished – task analysis and self-motivational beliefs (see Figure 3.2). People do not engage in tasks, set learning goals, plan and work strategically if they are not motivated by a strong personal power to do so (Jackson, 2004:396).

### **3.4.1.1 Sub-process 1: Task analysis**

With task analysis a learner creates an understanding of the learning task, the context, and the self in relationship to the learning task (Zimmerman, 2000:16; Muis, 2007:177). Self-regulated

learners are aware of what they know, what they believe, and the value of such information on their learning and performance (Zimmerman, 2002:68).

Task analysis is critical for effective self-regulation because it sets the context for learning. During school hours learners usually manage a great selection of academic assignments (Butler, 2002:81). To be able to do this, learners need a well developed approach towards organizing these assignments and the time management thereof (Butler, 2002:81). At the same time, they need effective approaches for performing a variety of specific tasks. Learners base decisions (e.g., about strategies to use) on their perception of task difficulty. Based on the requirements of a particular task, self-regulated learners select, adjust, or even create strategic approaches to achieve task objectives. With task analysis, learners draw on prior knowledge and experience to make strategic decisions (based on, meta-cognitive knowledge about the appropriate strategies to complete a specific task). For example, when selecting strategies, self-regulated learners consider approaches that have worked in the past when they are confronted similar tasks (Butler, 2002:81; Winne, 1995:173).

Task analysis involves the breakdown of certain activities stipulated in an instructional objective into sub-activities that can be individually taught (Blumenfeld *et al.*, 1987:136). The purpose of the breakdown is to enable the learner to reach the goal set by completing relatively simpler tasks, each of which can often facilitate the undertaking and completion of a subsequent, relatively more complex task (Lubbe, 2003:61). In this way, the sub-tasks identified through task analysis lead logically to the proper performance stipulated in the instructional objective (Lubbe, 2003:61).

An important form of task analysis involves the setting of goals (Zimmerman, 2000:16).

- **Goal-setting**

Goal-setting is an integral aspect of the forethought phase of self-regulation. Goal-setting refers to principle objectives that learners set to attain during learning, and involve the quality, quantity, and rate of task performance (Pintrich & Schunk, 2002:165) it involves a standard or criteria set by the learner prior to or during task performance (Schunk & Zimmerman, 1998:190).

Two important aspects of goals are goal choice and goal commitment. Goal choice refers to the actual goal that individuals are trying to obtain and the level at which they are trying to attain it.

Goal-commitment represents how strongly individuals are attached to the goal, how enthusiastic they are about the goal, or how determined they are to achieve it (Pintrich & Schunk, 2002:166).

Goal-setting in Zimmerman's model (see Figure 3.2) refers to the purpose why learners execute a learning task. Linking learning goals (e.g. knowledge; to be able to give feedback on knowledge gained; mastery goals) with learners' personal goals can enhance motivation (Schloemer & Brennan, 2006:82). A learning goal refers to what knowledge and skills students are to acquire; a performance goal denotes what task students are to complete (Schunk, 2003:63).

Goals are essential components of motivation and learning and are important motivational processes. Learners with a goal immediately experience a sense of self-efficacy (see paragraph 3.3.1.2) for achieving it and engage in activities they believe will lead to achievement: attend to instruction, rehearse information to be remembered, expend effort, and persist in their efforts and if learners are committed (Schunk, 1991:91; Pintrich & Schunk, 2002:165; Zimmerman & Cleary, 2006:57).

Goals can be distinguished by how far they extend into the future. Judged against temporally distant goals, proximal, short-term goals are closer at hand, achieved quickly, and result in greater motivation and higher significance. Proximal goals (e.g., those that can be achieved in a few minutes) are especially influential with young children who cannot fully represent distant outcomes in thought (Schunk, 2003:164). There is substantial proof of academic success by learners who set specific proximal goals for themselves, for example “such as memorizing a word list for a spelling test, and by learners who plan to use spelling strategies, e.g. segmenting words into syllables” (Zimmerman, 2000:17).

As learners work on tasks, they are aware of their progress towards their goals (Schloemer & Brennan, 2006:82; Zimmerman & Cleary, 2006:57; Winne, 1995:173). Goal-setting is not enough by itself; learners must show goal commitment by taking goals seriously and committing themselves to trying to reach these goals.

- **Strategic planning**

Strategic planning refers to the selection of learning strategies designed to reach the desired goal and for a skill to be mastered or performed at best; learners need strategies that are

suitable for the task and the situation (Zimmerman, 2000:17). According to Ertmer and Newby (1996:12) the learner's choice of strategies and procedures are based on the following aspects:

- the task at hand (type and level of difficulty of the task)
- personal resources (knowledge and skills)
- possible similarities between task requirements and resources (how can the task be done with knowledge and resources already at hand).

Self-regulated learners will constantly change their choice of objectives and strategies as the tasks changes or differs (Geduld, 2011:81). As learners develop more skills their strategies might become ineffective therefore new strategies must be used to achieve their set goals (Geduld, 2011:81).

#### **3.4.1.2 Sub-process 2: Self-motivation beliefs**

Self-regulatory skills are of little or no importance if learners cannot motivate themselves to use them (Zimmerman, 2000:17). Fundamental to the forethought processes of goal setting and strategic planning are a number of significant self-motivational beliefs: self-efficacy, outcome expectations, intrinsic interest or value, and goal orientation (Zimmerman, 2002:68).

- **Self-efficacy**

Self-efficacy beliefs are defined as “people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances (Bandura, 1986:391). Research (Pajares, 1996; Schunk, 1995, 1996) shows that self-efficacy predicts learners' academic motivation and learning. Pajares (1997) claims that self-efficacy provides the foundation for human motivation. By this he means that if one thinks one can do it, one can. If one does not think that one's actions will produce the outcome that one wants, then one will have little motivation for performing or learning (Schunk, 2003:159; Schunk & Zimmerman, 2007:477).

Self-efficacy is understood to influence task choice, effort, persistence, and achievement. Compared with learners who doubt their learning capabilities, those who feel successful in learning or performing a task, participate more readily, work harder, persevere longer when they come across difficulties, and achieve at a higher level (Schunk, 2003:161).

- **Outcome expectation**

A distinction is made between efficacy and outcome expectations. Outcomes include the satisfaction of goal accomplishment and the effect on motivation for engaging in similar activities in the future. For example, self-efficacy refers to the belief that one can attain a course grade of A, and outcome beliefs refer to expectations about the consequences this grade will produce after graduation, such as a desirable job (Brophy, 1998:255; Zimmerman, 2000:17). Although efficacy and outcome expectations are usually related, it is possible for a learner to have relatively high self-efficacy expectation for a task but a negative outcome expectation.

Outcome expectations are the expected outcomes of one's actions. From a motivational perspective, outcome expectations are important because learners think about possible outcomes of different actions and act in ways they believe they will reach the outcomes they value (Pintrich & Schunk, 2002:161).

- **Goal orientation**

Goal orientations are the reason why learners engage in tasks; for example, why they want to earn a high grade in a course or perform their best during a concert. Task-orientated learners compare their achievement with their own previous achievements and focus on mastery of the task, while performance-orientated learners compare their results with those of others and are concerned about ability and recognition (Van der Veen & Peetsma, 2009:35; Schunk, 2003:163).

In the literature on goal orientations, a general difference is made between learning or mastery- and performance (ego) goals. *Mastery goals* reflect the focus on the acquisition of knowledge, skill, and competence relative to one's prior performance; *performance goals* involve a motivation to demonstrate competence by outperforming fellow learners (Schunk, 2005:88; Zimmerman, 2000:18).

### **3.4.2 Phase 2: Performance/volitional control**

According to Jackson (2004:397) performance is the doing part of the process (see Figure 3.2). It includes the capacities and attitudes to self instruction and to seek help to learn, the self-management of tasks, the creation of processes for learning and the structuring of the

environment in order to learn. These processes enable learners to optimize their effort (Jackson, 2004:396).

One of the most important components of self-regulation is volition (Alderman, 1999:121). “Volition can be characterized as a dynamic system of psychological control processes that protect concentration and directed effort in the face of personal and/or environmental distractions and so aid learning and performance” (Corno, 1993:16). Volition is the tendency to maintain focus and effort toward goals despite potential distractions, it involves processes that occur during learning and affect attention and action. Volition controls the way between the goals and actions which learners need to accomplish. Volitional activities direct and control information processing, affects, and behaviours directed toward accomplishing goals (Pintrich & Schunk, 2002:179, 182; Alderman, 1999:121).

“Two major types of performance/volitional control processes are important: self-control and self-observation” (see Table 3.3) (Zimmerman, 2000:18).

#### **3.4.2.1 Sub-process 3: Self-control**

Self-control refers to the use of specific methods or strategies selected during the forethought phase. Among the main types of self-control methods that are used are the use of imagery, self-instruction, attention focusing and task strategies which help learners to focus on the task and maintain their effort (Zimmerman, 2000:18).

- **Self-instruction**

There are many ways in which learners can use self-instruction as a self-regulatory strategy (Alderman, 1999:131). Self-instruction can be used:

- ❖ as a volitional strategy to remind oneself to concentrate on work;
- ❖ to remember steps in academic tasks like problem solving or writing;
- ❖ to control attention and on task-behaviour;
- ❖ to cope with anxiety and failure; and
- ❖ as part of attribution retraining.

Skilful self-regulators are more likely to use systematic guides or techniques, such as self-instructions or guidance, to implement their strategies for learning. Self-instruction involves overtly (openly talking to oneself) or covertly (silently thinking) describing how to continue as

one executes a task. Self-guiding instructions can play a variety of volitional control functions, such as concentrating one's attention, following each step of a strategy, and praising oneself to sustain motivation (Nielsen, 2001:157).

Self-instruction can be effectively used to control behaviour and to develop cognitive skills. Self-instruction is used when learners remind themselves how to concentrate on a learning task and how to handle failure (Lubbe, 2003:69).

- **Imagery**

Imagery or the forming of mental pictures (of specific information) is another widely used self-control technique to convert knowledge and information into a code of choice (brain charts) so that understanding can take place (Zimmerman, 2000:19). Imaginal coding is especially important for learning activities not easily described in words, such as skills involving muscular movement (e.g. tennis serve) (Pintrich & Schunk, 2002:152). Imagery is used to increase learning. For example, history teachers can take their learners to nearby battlefields and have them imagine what it must have been like to fight a battle at that site.

- **Attention focusing**

Attention focusing is designed to improve one's concentration and screen out distracting noises, stimuli or events e.g. cell phones and television that distracts attention away from the learning task. Schunk (2000:128) views attention focusing as a necessary precondition for learning. Self-regulated learners are able to make use of different ways to improve attention or focus on work at hand, e.g. management of study area and noise control (Zimmerman, 2000:19).

- **Task strategies**

Tasks or learning strategies emphasizes how learners think, how they learn, and how they take active control over their own thinking and learning processes (Chan & Moore, 2006:162). In other words, “learners who are committed to do well on a given task, who are confident in their own capabilities, who have well-developed specific strategy knowledge, and who believe that their effortful use of strategies will lead to successful task performance are likely to be active in strategy selection, monitoring, and regulation” (Chan & Moore, 2006:163).

Learning strategies are essential factors in understanding the academic achievement of learners. Measures of learning and study strategies can help screen and identify learners at

risk for poor performance, can be used diagnostically to evaluate areas of difficulty that can lead to prescriptive or remedial plans, can serve as pre-post outcome measures in evaluating academic treatment programmes, and are useful in advising learners seeking a better awareness of their academic strengths and weaknesses (Prevatt *et al.*, 2006:448).

Learning strategies are the cognitive tools used to systematically manage the thought process associated with knowledge and skill acquisition, as learners prepare strategically to enhance their potential to learn new skills. Learning strategies should be seen as the intellectual resources that enable learners to plan, organize, monitor, guide, and reflect on learning (Holman, Epitropaki & Fernie, 2001:675; Nielsen, 2001:163; Zimmerman, 2000:19; Anderson, 1997:1).

#### **3.4.2.2 Sub-process 4: Self-observation**

Self observation is critical to determine progress in an activity. Self-observation refers to intentional awareness to aspects of one's behaviour. Learners cannot regulate their performance if they do not know what they do. Self observation is often accompanied by recording the frequency, intensity, or quality of behaviour (Zimmerman, 1994:76; Pintrich & Schunk, 2002:178).

Bandura (1986) explains self-observation as self-directed attention to one's own performance. Self-observation serves as an important self-regulatory function of providing information to individuals about what they do, which is then used to set goals and evaluate progress towards goal attainment (Zimmerman, 2000:19; Bandura, 1986:338). Self-observation is aided by self-recording, where behavioural instances are recorded along with such features as time, place, and duration of occurrence (Zimmerman, 1994:77).

- **Self-recording**

Self-recording is a record of cognitions or actions being monitored by a learner (Alderman, 1999:132). Self-recording is a general self-observational technique that can greatly increase the proximity, informativeness, accuracy, and worth of the feedback. Records can capture personal information at the point it occurs, structure it to be most meaningful, protect its accuracy, and provide a longer data base for proof of progress. For example, learners are often asked to self-record their time use to make them aware of how much time they spend studying. This method involves keeping track of key indicators of personal effectiveness as one performs,



and to understand this method of self-regulation, it is necessary to examine whether the learners knew when they were performing well and when they were not (Zimmerman, 2000:20; Zimmerman, 2002:68; Nielsen, 2001:163).

- **Self-experimentation**

Self-experimentation regularly refers to a 'trial and error' method in completing learning tasks, after which positive outcomes in learning behaviour are implemented (Zimmerman, 2002:68). When self-observation of normal differences in behaviour does not provide important diagnostic information, learners can take on personal experimentation by steadily changing the aspects of their functioning that are a problem (Zimmerman, 2000:21). For example, "a boy may notice that when he studied alone, he finished his homework more quickly than when studying with a friend. To test this observation, the boy could conduct a self-experiment in which he studied parallel lessons alone and in the presence of his friend to see whether his friend was an asset or a liability" (Zimmerman, 2002:68).

### **3.4.3 Phase 3: Self-reflection**

Bandura (1986) identified two self-reflective processes that are closely connected with self-observation: self-judgment and self-reaction (see Table 3.5) (Zimmerman, 2000:21).

During the self-reflection phase, which occurs after performance, people respond to their efforts through self-reflection (Pintrich & Schunk, 2002:179). During periods of self-reflection, they evaluate their progress by comparing their performances to their goals. Self-evaluations of progress enhance efficacy and maintain motivation. Learners may decide to continue pursuing their goals, modify them, or set new ones (Schunk, 2003:162).

#### **3.4.3.1 Sub-process 5: Self-judgment**

Self-judgment involves self-evaluating one's performance and understanding necessary meaning to the results (Zimmerman, 2000:21). Bandura (1986:340) claims that self-judgment refers to a systematic comparison of one's performance level with a standard against which it is measured. Self-judgment depends on the type of self-evaluative standards employed, goal properties, importance of goal attainment and attributions made for the outcomes (Zimmerman, 2000:21; Schunk, 2001:131). Self-judgment is affected by the value of goal achievement.

When learners care little about how well they perform, they might not judge their performance or attempt to improve (Schunk, 1994:79).

- **Self-evaluation**

Self-evaluation refers to comparing self-monitoring information with a standard or goal (Zimmerman, 2000:21) it also refers to comparisons of self-observed performances against some standard, such as one's prior performance, another person's performance, or an absolute standard of performance (Zimmerman, 2002:68). Self-evaluation or monitoring is a process in which learners assess their progress toward learning goals and modify their behaviour in an effort to improve their learning process (Schloemer & Brenan, 2006:82).

Self-evaluation is expected to influence self-corrective responses such as modifying prior responses to make them more effective or modifying the standards if they are found to be insufficient or unnecessary (Zimmerman, 2000:11).

Schunk believes that self-evaluation comprises (a) self-judgments of present performance through comparisons with one's goal and (b) self-reactions to those judgments by considering noteworthy performance (Schunk, 2003:160). Jackson poses that self-evaluation involves comparing one's own performance with a standard criteria or goal (Jackson, 2004:397). It might also involve comparing one's own perceptions of performance with the feedback given from learners or peers (Jackson, 2004:397).

- **Causal attribution**

Attributions can be defined as a learner's perceived causes of his/her learning outcomes (Schunk, Pintrich & Meece, 2010:375). According to the Attribution Theory, the motivational dimensions of attributions (see Figure 3.4) can be classified into three causal dimensions: (a) a locus, (2) a stability and (c) a controllability dimension (Schunk *et al.*, 2010:97; Proudfoot, 2011:72).

Stability	Locus			
	Internal		External	
	Controllable	Uncontrollable	Controllable	Uncontrollable
Stable	Long term effort	Aptitude	Instructor bias/ favoritisms	Easy/difficulty of school or course requirements
Unstable	Skills/knowledge Temporary or situational effort for exam	Health on the day of the exam Mood	Help from friends/ teacher	Chance

**Figure 3.3: Achievement attributions classified by the locus, stability, and controllability dimensions** (Pintrich & Schunk, 2002:117).

A learner's judgment of her learning outcomes may give reason for her to want to explain the way the outcomes are what they are, thus to explain the causes of the outcomes. The attribution theory thus gives one an insight in a person's perceptions of the causes of his/her learning behaviour or outcomes (Pintrich & Schunk, 2002:93).

Pintrich and Schunk (2002:113) clarifies the importance of the three dimensions of the structure of causal attribution: (a) the *locus* dimension is about how internal versus external causes are perceived, (b) *stability* dimension concerns how stable or unstable a cause is perceived, and (c) the *controllability* dimension concerns how controllable apposed to uncontrollable a cause is perceived.

The *locus dimension* (see Figure 3.3) refers to whether a cause is perceived as internal or external. Feelings of self-esteem, shame or guilt for example may be based on a learners' perception of the location of the cause. The cause of an outcome as seen by the learner can be seen as residing in him or her (thus the cause is internal) or "outside" the learner (thus external) (see Figure 3.3). If learners attribute success or failure to internal locus, they are the creators of what happens rather than be controlled by outside forces (Hunter & Barker, 1987:51). As an originator, a person feels proactive rather than reactive to the environment. Attribution of success to internal locus (ability, effort) results in increased self-esteem. Attribution of failure to internal locus results in shame (lack of ability) or guilt (lack of effort), (Pintrich & Schunk, 2002:113; Hunter & Barker, 1987:51).

The *stability dimension* refers to whether a cause is perceived as fixed and stable or whether it is variable and unstable across situations and over time (see Figure 3.3). Expectations for the future are based on whether the cause is perceived as stable or subject to change (Pintrich & Schunk, 2002:114; Hunter & Barker, 1987:51).

In terms of the real content of an attribution, there are an endless number of specific reasons that learners can use to explain why they succeeded or failed. In studies on achievement situations, the two most frequently used attributions are some form of ability and effort. Learners do not really exercise control over ability, task difficulty, or luck, so, they put forth effort if they believe that effort will influence the outcome. If they believe studying will influence the grade, they are more apt to study. If they believe the grade is the result of the teacher's compassion, the kind of test, or just luck, there's no point in studying (Pintrich & Schunk, 2002:140; Hunter & Barker, 1987:51). Attribution theory and research show that the dimensions of locus, stability and controllability are associated with different emotions such as pride, shame and guilt, and the dimension of controllability and responsibility judgments are associated with anger, sympathy, emotions as well as behaviours to others (Pintrich & Schunk, 2002:140).

#### **3.4.3.2 Sub-process 6: Self-reaction**

Self-reactions are behavioural, cognitive, and affective responses to self-judgments (Pintrich & Schunk, 2002:79). Self reactions motivate; the idea that one is making adequate progress, along with the probable satisfaction of accomplishing the goal, improves self-efficacy. Self-reactions include self-satisfaction and adaptive inferences (Pintrich & Schunk, 2002:179).

- **Self-satisfaction**

One form of self-reaction involves feelings of self-satisfaction and positive affect regarding one's performance. Increases in self-satisfaction enhance motivation, whereas decreases in self-satisfaction undermine further efforts to learn (Zimmerman, 2002:68).

Bandura (1991) claims that self-satisfaction involves perceptions of satisfaction or dissatisfaction and associated affect regarding one's performance. This is important because people pursue courses of action that result in satisfaction and positive affect. They avoid those courses that produce dissatisfaction and negative affect, such as anxiety. When self-

satisfaction is made conditional on reaching adopted goals, people give direction to their actions and create self-incentives to persist in their efforts. A person's level of self-satisfaction also depends on the intrinsic value or importance of the task (Zimmerman, 2000:23).

Self-satisfaction involves perceptions and associated effects regarding one's own performance (Jackson, 2004:397). Courses of action that result in satisfaction and positive effect are pursued; whereas actions that produce dissatisfaction and have negative effects are avoided (Jackson, 2004:397). Self-regulated learners condition their satisfaction on reaching goals, and these self-incentives motivate and direct their actions (Jackson, 2004:397). Self-reactions also take the form of adaptive/defensive responses.

- **Adaptive-defensive**

Defensive reactions refer to efforts to protect one's self-image by withdrawing or avoiding opportunities to learn and perform, such as dropping a course or being absent for a test. In contrast, adaptive reactions refer to adjustments designed to increase the effectiveness of one's method of learning, such as discarding or modifying an ineffective learning strategy (Zimmerman, 2002:68).

Adaptive or defensive inferences are conclusions about how one needs to alter his or her self-regulatory approach during subsequent efforts to learn or perform. Adaptive inferences are important because they direct learners to new and potentially better forms of performance self-regulation, such as by shifting the goals hierarchically or choosing a more effective strategy. In contrast, defensive inferences serve primarily to protect the learner from future dissatisfaction and aversive affect, but fortunately they also undermine successful adaptation. These defensive self-reactions include helplessness, procrastination, task avoidance, cognitive disengagement, and apathy (Zimmerman, 2000:23).

### **3.5 Conclusion**

Schunk (2000:377) claims that various self-regulatory processes come into play during the different phases (forethought; performance and self-reflection). Learners enter learning situations with goals and varying degrees of self-efficacy for achieving them. During performance control they implement learning strategies that affect motivation and learning, during periods of self-reflection learners engage in the important process of self-evaluation and self-reflection (Schunk, 2000:377). Self-regulation is a cyclical process, because these three

factors continuously change during learning and must be monitored. Such monitoring leads to changes in an individual learner's strategy, cognition affect and behaviour (Schunk, 2000:377).

Perhaps our most important quality as humans is our capability to self-regulate (Zimmerman, 2000:13). Self-Regulation has provided us with an adaptive edge that enabled our ancestors to survive and even flourish when changing conditions led other species to extinction (Zimmerman, 2000:13). Reflecting on one's learning should not be an afterthought for learners; rather, it should be a self-fulfilling phase of a cyclic process that is preceded by systematic forethought and performance control (Zimmerman, 1998, 2000:13, 14).

From the discussion in this chapter it is clear that when learners are self-regulated learners they will be able to be more academically successful and they will be able to handle personal difficulties because they are actively engaged in their own learning. Based on the review of literature on self-regulated learning the assumption to be tested with this research is that there is a relationship between self-regulated learning and academic performance.

## CHAPTER 4

### METHOD OF RESEARCH

#### 4.1 Introduction

The purpose of this study was to determine whether there was a relationship between resilience, self-regulated learning and the academic performance of learners living under adverse circumstances and if such a relationship exists also what the nature of the relationship was. This purpose can therefore be divided into the following sub-goals:

- To determine the relationship between resilience and the academic performance of learners;
- the relationship between self-regulated learning and the academic performance of learners; and
- the relationship between resilience, self-regulated learning and the academic performance of learners.

This chapter presents the research method that was followed in this study. This chapter is structured as follows:

- Research paradigm (par. 4.2)
- Research design (par. 4.3)
- Quantitative research (par. 4.4)
- Quantitative research designs (par. 4.5)
- Participants (par. 4.6)
- Measuring Instruments (par. 4.7)
- Data Collection (par. 4.8)
- Variables (par. 4.9)
- Statistical Analysis (par. 4.10)
- Ethical aspects (par. 4.11)
- Administrative procedures (par. 4.12)
- Conclusion (par. 4.13)

## 4.2 Research paradigm

A paradigm is a perspective based on a set of assumptions, concepts, and values that are held by a community of researchers (Johnson & Christensen, 2008:33). A paradigm represents what researchers believe about the world but cannot prove or fully comprehend. The actions taken by researchers cannot happen without reference to these paradigms (Gay & Airasian, 2003:3; Nieuwenhuis, 2007:47). Nieuwenhuis (2007:47) defines a paradigm as a set of assumptions or beliefs about basic or fundamental aspects of reality, such as beliefs about reality (ontology), the relationship between the knower and what can be known (epistemology) and assumptions about methodologies.

Different research paradigms can be distinguished, for example:

- objectivism and positivism, and
- subjectivism and constructivism.

The objectivist research paradigm is usually associated with quantitative research and the subjectivist research paradigm with qualitative research (Gall, Gall & Borg, 2003:24; Gelo, Braakman & Benetka, 2008:269, 270). Quantitative research sees reality as single and tangible, where the knower and the known are considered to be relatively separate and independent. Qualitative research, involves an interpretive, naturalistic approach and views reality as a multiple, socially and psychologically constructed phenomenon, where the knower and the known are inextricably connected to each other and where the researcher is more concerned to understand individuals' perceptions of the world (Gall *et al.*, 2003:24; Bell, 2005:8; Suter, 2006:41; Nieuwenhuis, 2007:48).

Generally three types of research designs are distinguished: qualitative, quantitative and mixed methods. Within the contexts of educational research *Quantitative research* is a type of research in which the researcher decides what to study, asks specific, narrow questions, collects numeric data from participants, analyses these numbers using statistics, and conducts the investigation in an unbiased, objective manner. *Qualitative research* is a type of research in which the researcher relies on the views of the participants, asks open questions, collects data consisting largely of words (narratives or text) from participants, describes and analyses these words for themes, and conducts the inquiry in a subjective, unbiased manner. *Mixed-method research* is a procedure for collecting both quantitative and qualitative data in a single study,



and for analysing and reporting this data based on priority and sequence of the information (Bless & Higson-Smith, 2005:37; Creswell, 2005:39; Creswell, 2009:3). Table 4.1 provides a further elaboration of the distinguishing characteristics of quantitative and qualitative research. The characteristics of quantitative research are discussed in more detail in paragraph 4.4.

For the purpose of this study quantitative research methods are applied so that the necessary research questions can be answered on the basis of data that was collected.

### **4.3 Research design**

A research design describes the procedures for conducting research, a project or study which includes a systematic plan. This is represented in different models, such as quantitative or qualitative research design, and measures (e.g. example questionnaires or surveys), where relevant data are collected, analysed and interpreted to investigate a particular problem in a scientific manner (Mouton & Marais, 1990:34; Bless & Higson-Smith, 2005:63; McMillan & Schumacher, 2010:20). The research design offers the researcher with a clear research structure; directs the decisions made and makes sense of interpretations.

The aim of choosing a design is '*to get the greatest amount of good quality information and knowledge from minimum clutter and resource inputs*' (Lankshear & Knobel, 2010:21). Creswell (2009:18) states that the type of research approach a researcher follows, depends on the goals of research and the research questions to be answered. Since the purpose and research question of this study, among other things, are to determine whether there is a relationship between resilience, self-regulated learning and the academic performance of these learners, a quantitative approach is more suitable and therefore was chosen and will be discussed below.

### **4.4 Quantitative research**

Quantitative research can be defined as an objective investigation valuable when describing a tendency or development and explaining the relationship among variables or phenomena found in literature, (see Table 4.1). The quantitative researcher tests theories about reality, looks for cause and effect, and uses quantitative measures to gather data to test a the research question or hypothesis (Ivankova, Creswell & Plano Clark, 2007:255; Johnson & Christensen, 2008:39; Creswell, 2005:597; McMillan & Schumacher, 2010:21).

**Table 4.1: Characteristics of quantitative and qualitative research in the process of research**

<b>Characteristic</b>	<b>Quantitative</b>	<b>Qualitative</b>
<b>Purpose</b>	<ul style="list-style-type: none"> <li>• To explain and predict</li> <li>• To prove and validate</li> <li>• Confirmatory or “top down”. The researcher <i>tests</i> hypothesis and theory with data</li> </ul>	<ul style="list-style-type: none"> <li>• To describe and explain</li> <li>• To investigate and understand</li> <li>• Exploratory or “bottoms up”. The researcher <i>generates</i> new hypothesis and grounded theory from data collected during research</li> </ul>
<b>Approach</b>	<ul style="list-style-type: none"> <li>• Traditional, experimental, or positivist</li> </ul>	<ul style="list-style-type: none"> <li>• Interpretive, constructivist or post-positivist</li> </ul>
<b>Nature</b>	<ul style="list-style-type: none"> <li>• Focused</li> <li>• Identified variables</li> <li>• Established guidelines</li> <li>• Predetermined methods</li> <li>• Somewhat context free</li> <li>• Detached view</li> </ul>	<ul style="list-style-type: none"> <li>• Holistic</li> <li>• Unidentified variables</li> <li>• Flexible guidelines</li> <li>• Emergent methods</li> <li>• Context-bound</li> <li>• Personal view</li> </ul>
<b>Data Collection</b>	<ul style="list-style-type: none"> <li>• Numeric data</li> <li>• Representative, large sample</li> <li>• Study populations or samples that represent populations</li> <li>• Predetermined instruments</li> </ul>	<ul style="list-style-type: none"> <li>• Textual, narrative and/or image-based data</li> <li>• General, emerging form</li> <li>• Informative, small sample</li> <li>• Loosely structured or non-standardized observations and interviews</li> <li>• Study cases</li> </ul>
<b>Characteristic</b>	<b>Quantitative</b>	<b>Qualitative</b>
<b>Data Analysis</b>	<ul style="list-style-type: none"> <li>• Statistical analysis</li> <li>• Emphasis on objectivity</li> <li>• Deductive reasoning</li> </ul>	<ul style="list-style-type: none"> <li>• Text analysis</li> <li>• Search for themes and categories</li> <li>• Acknowledgement that analysis is subjective and potentially biased</li> <li>• Inductive reasoning</li> </ul>
<b>Reporting of Results</b>	<ul style="list-style-type: none"> <li>• Numbers</li> <li>• Standard and fixed</li> <li>• Statistics, aggregated data</li> <li>• Formal voice, scientific style</li> </ul>	<ul style="list-style-type: none"> <li>• Words</li> <li>• Narratives, individual quotes</li> <li>• Personal voice, literary style, prepare interpretive reports that reflect researchers' constructions of the data and an awareness that readers will form their own constructions from what is reported</li> </ul>

Gall *et al.* (2003:25); Leedy & Ormrod (2005:96); Creswell (2005:44); Johnson & Christensen (2008:34).

The following aspects of quantitative research are discussed: purpose; nature; communication of results; data collection and data analysis.

#### **4.4.1 Purpose**

With quantitative research the aim is:

- to determine the relationship between one or more variables (an independent variable or variables) together with another (a dependant or outcome variable) in a population or sample of a population,
- to find accurate measures, evaluate objectives by using surveys and questionnaires (Miles & Huberman, 1994:40; Hopkins, 2005:1).

Furthermore Creswell (2009:4) describes the aim of quantitative research as a mean of testing objective theories by investigating the relationships among variables, to validate and explain the outcomes so that proper conclusions can be made.

#### **4.4.2 Nature**

Quantitative researchers are likely to define the concepts, variables, hypothesis and methods of measurements before the research begins and this will remain the same throughout the research. Quantitative research is either descriptive (participants usually measured once) or experimental (participants measured before and after treatment) (Hopkins, 2000:1).

The following five characteristics are particularly important with reference to the quantitative research approach (Vogt, 1999:152; Leedy & Ormrod, 2005:95; Johnson & Christensen, 2008:39, 604; McMillan & Schumacher, 2010:8, 103):

- Variables – a condition or characteristic that can take on different values or categories, e.g. a learner's academic performance will not be the same each time he or she takes a test.
- Objectivity – unbiased, open minded, not subjective. Objectivity as a concept refers to data collection and analysis procedures from which a single reasonable interpretation can be made.
- Testing of theory and hypotheses – predicts and explains generalizable findings of a condition or characteristic that can take on different values or categories. By testing a

theory in different situations or on different populations, the researcher may adjust or confirm it.

- Statistics and statistical significance – tools for understanding data and the rejection of the null hypothesis based on the alpha level.

Validity of the study – accuracy of the inferences, interpretations, or actions made on the basis of test scores. It refers to the truthfulness of findings and conclusions.

### **4.4.3 Data-collection**

The objective of the quantitative researcher, as described by Miles and Huberman (1994:40), is to seek accurate measurement and to evaluate target concepts by using surveys and questionnaires.

To obtain highly reliable and valid scores the quantitative researcher collects data using existing standardized instruments (e.g. surveys, questionnaires). These instruments are usually structured and include close-ended items, statements or questions with predetermined multiple Likert-type choices or 'yes'/'no' responses. Questionnaires are the most widely used technique for collecting information from participants (Ivankova *et al.*, 2007:256; McMillan & Schumacher, 2010:195). The use of questionnaires as method of data collection has certain advantages, such as:

- many participants can complete the questionnaire in a short space of time, which means that a great amount of data can be collect in a short period of time;
- questionnaires are relatively cheap and easy to complete;
- participants can be reached and involved from far away places (Maree & Pietersen, 2007:157).

### **4.4.4 Data analysis**

Once the data have been collected, statistical analyses are performed to summarize and understand the data as well as the outcomes of the analyses (Lankshear & Knobel, 2010:163; Suter, 2006:363). There are two main forms of statistics which are used for data analyses: *descriptive* and *inferential*. With *descriptive* statistics the objective is to organize collected data so it is easier to understand the data. *Inferential* statistics are used to make inferences or conclusions based on measured aspects of a sample about the characteristics of a population

or selected group of a population (Lankshear & Knobel, 2010:163; Macmillan & Schumacher, 2010:317). Analyzing and interpreting the data involves according to Creswell (2005:10) drawing conclusions from the data, presenting it in tables, figures and pictures to summarize the data and to explain the conclusions in words as to answer the research questions.

#### **4.4.5 Communication of results**

Quantitative researchers usually identify one or more variables that they plan to study and then collect data specifically related to those variables. The data collected from the participants (see par. 4.5) are communicated by means of numbers, quantities and statistics. Gathering and analyzing information in the form of numbers distinguishes quantitative research from other types of research. The simplest way to present the data is to indicate the percentage of participants who selected each alternative for each item, however groups of items or clusters focused on the same issue is more meaningful and reliable. Then relationships between variables can be investigated by comparing the summed scores of different subgroups, e.g. self-evaluation (Gay & Airasian, 2003:308; Lund, 2005:127; Ivankova *et al.*, 2007:255; Drew, Hardman & Hosp, 2008:138).

### **4.5 Quantitative research designs**

The three main categories into which quantitative research designs can be classified are experimental designs, pre-experimental designs and non-experimental designs (Maree & Pietersen, 2007:149).

#### **4.5.1 Experimental designs**

Defined in a general way, an experiment is simply a way of learning something by varying some conditions and observing the effect on something else. With an experimental design, the researcher manipulates or investigates a procedure that determines what the subjects will experience. Experimental designs have a particular purpose in mind: to investigate cause-and-effect relationships between interventions and measured outcomes (Tuckman, 1988:142; Maree & Pietersen, 2007:149; McMillan & Schumacher, 2010:21). There are three main characteristics which distinguishes an experimental design from other designs such as non-experimental designs:

- **Manipulation** takes place which means that some kind of treatment is given to participants.
- There is some **control** - participants are used as a control by not receiving any treatment.
- **Randomization** - participants are randomly assigned to groups (Maree & Pietersen, 2007:149).

#### 4.5.1.1 True experimental designs

A true experimental design (see Table 4.2) is a type of experimental design that uses random assignment of subjects by assigning participants randomly to either an experimental or control group. This type of design has the following qualities:

- Participants are assigned to two or more treatment conditions – experimental (RE) and control groups (RC);
- Pre- ( $Y_1$ ) and post-tests ( $Y_2$ ) are used to compare the two groups of participants;
- Best suited for investigating causal relationships between variables;
- Independent variable(s) are being manipulated;
- Data are numerical and may be collected through tests, performance assessments, observations, questionnaires;
- Experimental design controls both the selection and the assignment of participants;
- The answer to the question whether the treatment had an effect or not is obtained when comparing the two groups (RE and RC) on the post-test ( $Y_2$ );
- Especially useful in addressing questions regarding learning processes (Gay & Airasian, 2003:356; Leedy & Ormrod, 2005:222; Pietersen & Maree, 2007:150; Lankshear & Knobel, 2010:145).

A pretest ( $Y_1$ ) provides a measure on some attribute or characteristic that is being assessed in an experiment before the participants receive a treatment. After the treatment, another reading on the attribute or characteristic ( $Y_2$ ) is taken. Individuals in the experimental group receive the experimental treatment (X) while those in the control group do not (Creswell, 2005:285, 295; McMillan & Schumacher, 2010:268, 491).

**Table 4.2: True experimental design**

Pre- and posttest design			
Group	Pretest	Treatment	Posttest
RE	(Y <sub>1</sub> )	(X)	(Y <sub>2</sub> )
RC	(Y <sub>1</sub> )	(-)	(Y <sub>2</sub> )

(Leedy & Ormrod, 2005:325)

#### 4.5.1.2 Quasi-experimental designs

A quasi-experimental is a design (see Table 4.4) where there is no random assignment of subjects and usually has the following qualities:

- Participants in already existing or intact groups are compared with regard to two or more treatment conditions;
- No random assignment to treatment conditions;
- Independent variable(s) are being manipulated;
- Often is used for evaluating some sort of intervention (e.g. math or spelling programme);
- Data often comprise test scores calculated before (pretest) the intervention and/or again after the intervention (posttest) (Creswell, 2005:298; Lankshear & Knobel, 2010:145; McMillan & Schumacher, 2010:278).

**Table 4.3: Quasi-experimental designs**

Pre- and posttest design			
Select Control Group	Pretest	No Treatment	Posttest
Select Experimental Group	Pretest	Experimental Treatment	Posttest

(Creswell, 2005:297)

#### 4.5.1.3 Non-experimental designs

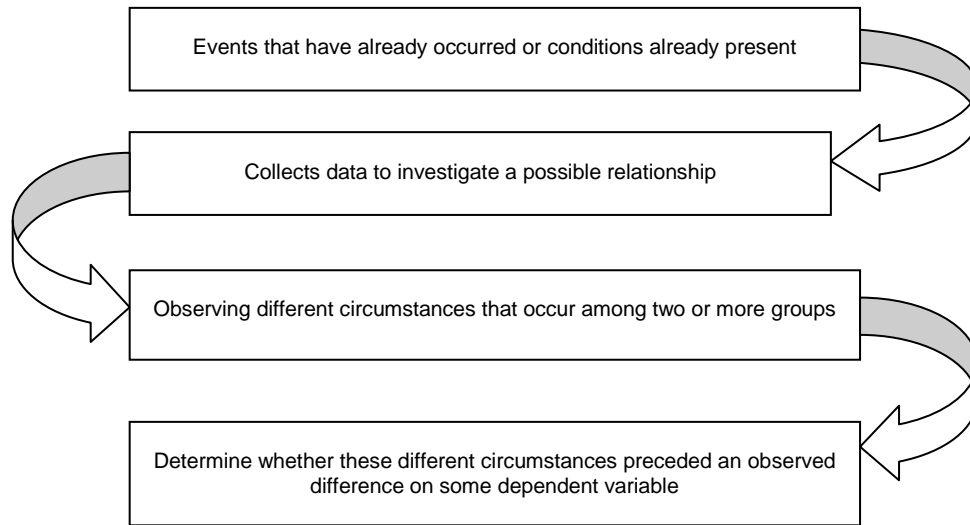
Non-experimental designs are used in descriptive studies in which participants that have been selected to take part in the research are measured on all the relevant variables at a specific

time. There are primarily six types of non-experimental designs: descriptive, comparative, correlational, survey, ex post facto and secondary data analysis (Drew *et al.*, 2008:166; McMillan & Schumacher, 2010:22).

- **Descriptive:** Research using descriptive design simply provides a summary of an existing phenomenon by using numbers to characterize individuals or groups.
- **Comparative:** The researcher investigates whether there are differences between two or more groups on the phenomena being studied
- **Correlational:** Research in which information on at least two variables is collected for each subject in order to investigate the relationship between the variables.
- **Survey:** Type of research that involves asking questions of a sample of individuals who are representative of a group or groups under study. Survey research typically uses questionnaires, interviews, or both procedures for data collection.
- **Ex post facto:** Research that investigates events that have already occurred and implies a cause-and-effect relationship from the results.
- **Secondary data analysis:** Statistical analysis that uses secondary data (data that were collected previously and are available in a database for further use) (Drew *et al.*, 2008:166; McMillan & Schumacher, 2010:22).

To adhere to the purpose and research question of this study an ex post facto research design was chosen. Clearly the term *ex post facto* means 'after the fact'. This indicates that *ex post facto* research is conducted after variation in the variable of interest has already been determined in the natural course of events (Ary *et al.*, 2006:356). Leedy and Ormrod (2005:108) explains *ex post facto* research as an approach in which a researcher looks at conditions that have already occurred and then collects data to investigate a possible relationship between these conditions and subsequent characteristics or behaviours (see Figure 4.1).





**Figure 4.1: Diagram of different steps in *ex post facto* design** (Leedy & Ormrod, 2005:232).

A simple *ex post facto* design can be depicted as follows where Exp refers to a prior experience that one group has had and another has not.

Group	Prior event(s)	Investigating period
Group 1	Exp	Obs
Group2	-	Obs

**Figure 4.2: Simple *ex post facto* design** (Leedy & Ormrod, 2005:252)

#### 4.5.1.4 Factorial designs

When a researcher studies the effects of two or more independent variables on a dependent variable as well as the effect of the interaction of the two independent variables on the dependent variable in a single study, this design is known as a factorial design (Leedy & Ormrod, 2005:237; Ary *et al.*, 2006:335; MacMillan & Schumacher, 2010:487). The benefit of a factorial design is that researchers can examine interaction effects of multiple independent

variables as well as the separate or main effects of those variables by themselves (Ary *et al.*, 2006:335).

The simplest factorial design (see Table 4.3) is the 2 X 2 (2 by 2). In this design each of the two independent variables has two levels.

**Table 4.4: Simple factorial design**

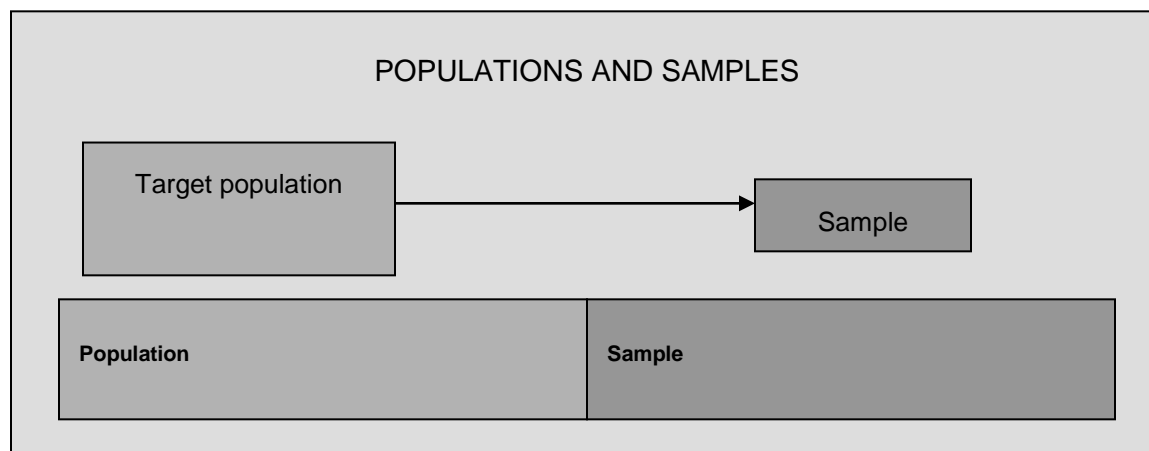
Simple factorial design		
	Independent Variable 1	
	High	Low
Independent Variable 2 (High)	Dependent Variable	Dependent Variable
Independent Variable 2 (Low)	Dependent Variable	Dependent Variable

(MacMillan & Schumacher, 2010:283)

## 4.6 Participants

Participants in a study can be selected in various ways e.g. a *population* refers to a group to which the researcher would like the results of a study to be generalized, a *sample* however refers to a number of individuals selected from a population for a study (see Figure 4.2), preferably in such a way that they represent the larger group from which they were selected (Gay *et al.*, 2003:591).

In quantitative studies the group of participants for whom the data are collected is referred to as the sample. It is important to ensure that the participants are appropriate for the research question when a sample is selected (Drew *et al.*, 2008:106; McMillan & Schumacher, 2010:129, 489).



**Figure 4.3: Populations and samples**

Learners (N≈182) of the Senior Phase (Grade 7, 8 and 9) of a selected General Education and Training School in the Fezile Dabi District (Department of Education: Free State) participated in this study (see Table 4.5).

**Table 4.5: Participants in research**

Grade	Number of registered learners	Number of letters received - participants	Number of learners absent when questionnaires were completed	Number of participants who completed the questionnaires		
				Male	Female	
7	98	86	1	37	48	85
8	72	51	3	23	25	48
9	53	45		19	26	45
	Total: 223	182	4	79	99	178

## 4.7 Measuring instruments

Researchers need to be aware of the strengths and limitations of the measuring instruments they are going to use so that the most appropriate measuring tool, for a particular research project, is chosen (Ary *et al.*, 2006:238; Creswell, 2005:47; Pietersen & Maree, 2007:215).

Researchers in quantitative research are concerned with using measuring instruments that are both reliable and valid. The reliability and validity of the measuring instrument influence the degree to which something can be learned about the phenomenon being studied, the possibility that statistical significance with the data analysis can be obtained and the extent to which meaningful conclusions can be drawn from the data (Leedy & Ormrod, 2005:27).

### 4.7.1 Validity

The validity of a measuring instrument indicates whether or not that instrument measures what it is supposed to measure (Gay *et al.*, 2003:137; McMillan & Schumacher, 2010:486; Proudfoot, 2011:118). Validity is the most important characteristic a measuring instrument can possess. Validity means that a researcher can draw meaningful and justifiable assumptions or conclusions from data about a sample of the population (Gay & Airasian, 2003:135; Creswell, 2005:600).

Validity takes different forms, each of which is important in different situations (Gay *et al.*, 2003:137; Leedy & Ormrod, 2005:92; Pietersen & Maree, 2007:217; McMillan & Schumacher, 2010:486):

- **Face Validity:** Refers to the extent to which an instrument 'looks' valid for measuring a particular characteristic. Thus face validity refers to the degree to which a measuring instrument appears to measure what it claims to measure.
- **Content Validity:** Refers to the extent to which the instrument covers the complete content of the particular construct that it is set to measure e.g. if an instrument is developed to measure intelligence, there should be items that cover all the different aspects of intelligence, for example verbal reasoning, analytical ability etc. Content validity requires both *item validity* and *sampling validity*. Item validity is concerned with whether the test items are relevant to measuring of the planned content area. Sampling validity is concerned with how well the test samples the total content area being tested.

- **Criterion Validity:** This is most likely the crucial test as to whether an instrument measures what it is supposed to measure. To be able to measure the degree of criterion validity of an instrument, scores on an existing instrument (the criterion) which is known to measure the same construct should be available for the sample of subjects. The correlation between the measuring instrument and criterion is an indication of the criterion validity of the instrument. A high correlation indicates a high degree of validity and a low correlation indicates a low degree of validity, e.g. personality test to assess a participant's goal setting abilities has criterion validity if the scores correlate with appropriate goal setting tests. Criterion validity has two forms, *concurrent* and *predictive*. Concurrent validity is the degree to which the scores on two tests taken at the same time are correlated, and predictive validity is the degree to which the scores on two tests taken at different times are correlated.
- **Construct Validity:** Refers to the extent to which an instrument measures characteristics that cannot be directly observed but must instead be referred from patterns in a person's behaviour (e.g. motivation, creativity – are all constructs), evidence should therefore be obtained to measure the construct being discussed.

#### 4.7.2 Reliability

Reliability literally means the dependability or trustworthiness of the measuring instrument. Reliability is the extent to which a measuring instrument is repeatable and consistent. The more reliable a measuring instrument, the more confidence researchers have that the scores obtained from the instruments are essentially the same scores that would be obtained if completed by similar participants (Gay & Airasian, 2003:141; Pietersen & Maree, 2007:215; Drew *et al.*, 2008:133; McMillan & Schumacher, 2010:180). There are different types of reliability:

- **Stability reliability:** Also called test-retest reliability is the extent to which scores on the same test are consistent over time. This type of reliability of an instrument is determined by administering the instrument to the same subjects on two (or more) occasions. If the responses of the subjects are consistent (e.g. if scoring high the first time and also score high the second time, etc.), then the correlation coefficient and the reliability are high. There should be a long enough time between measures so that the reliability in scores is not influenced by a memory or practice effect.
- **Equivalence reliability:** This form of reliability combines equivalence and stability. When two equivalent forms of the same instrument are administered to a group at about

the same time and the scores are related, those results are a coefficient of equivalence (similarity). Since a different instrument is used on the second occasion, the possibility of the memory effect problem is eliminated.

- **Split-half reliability:** This is a type of internal consistency reliability in which equal halves of a test is correlated. The items that make up this type of measuring instrument are divided in two, forming two separate instruments. To divide the items, three methods are commonly used:
  - Even numbered items equals' one instrument and odd numbered items the other.
  - The items are randomly assigned to two instruments.
  - The first half of the items form the one instrument and the second half the other.
- **Internal reliability:** The coefficient that is used to measure the internal reliability of an instrument in this study is called Cronbach's alpha coefficient and is based on the inter-item correlations. If the items are strongly correlated to each other, their internal consistency is high and the alpha coefficient will be close to one. If, the items are poorly formulated and do not correlate strongly, the alpha coefficient will be close to zero.

## 4.8 Data collection

For the purpose of this study three instruments were selected to collect quantitative data.

In order to collect information regarding the Grade 7, 8 and 9 learners of the school a biographical questionnaire was compiled (par. 4.8.1). The researcher also made use of the Self-Regulated Learning Questionnaire (SRLQ) (par. 4.8.2) and the Child and Youth Resilience Measure (CYRM) (par. 4.8.3).

### 4.8.1 Biographical questionnaire

A biographical questionnaire assesses the personal characteristics of individuals/participants (Creswell, 2005:362). A *biographical questionnaire* (see Addendum A) was used to obtain data on the participants' gender and age, whether they were living with their parents or guardians, the number of people living in the house or dwelling, alcohol/drug abuse, violence, after school care and community services thus to obtain data on certain aspects of the learner's life and adversity which they face everyday. As some of the questions might have sensitive information these questions were included late in the questionnaire after participants answered neutral questions and felt more comfortable completing the questionnaire (Creswell, 2005:363).

The data was used to compile a biographical profile of the learners. The most important aspects under investigation were (see par. 5.2.1):

- **Family related problems** - The family prepares the individual for contributing to society in a useful, active manner. More specifically, the family is considered to be vital in the raising of children who are well-socialised, mentally healthy and emotionally strong (Henn, 2005:2; Ziehl, 2002:26). It is therefore understandable that the family is viewed as one of society's most important pillars (Burman, 1996 *in* Henn, 2005:2) with stable family life enhancing social stability (Henn, 2005:2). The modern family is subjected to severe pressures which have led to a worldwide decline in the value of family life. The results of this can include increasing divorce rates, death of parents through disease and poverty. All these factors, amongst others, contribute to the disintegration of families (Henn, 2005:2).
- **Abuse** - Child maltreatment typically focuses on the following forms of child abuse and neglect:
  - physical abuse and neglect
  - emotional abuse and neglect
  - sexual abuse (Polonko, 2006:261).
- **Violence** - The word *violence* derives from the Latin root *vio*, referring to 'force'. It generally refers to physical force but is mostly applied to human actions (Crawage, 2005:11). Violence is sometimes used interchangeably with aggression, but the two can be distinguished from each other (Crawage, 2005:11). Whilst aggression is largely unprovoked, violence usually has a reason, for example, to bring about extreme harm or death whether in the household or neighbourhood (Anderson & Bushman, 2002:29).
- **Community related aspects** - According to Kumpfer (1999:189) the social environment of an individual is extremely important in the resilience process. The social environment influences the development and socialisation of the child. The social environment also serves to either cushion or intensify the impact and challenging events on the child (Mampane, 2004:22; Kumpfer, 1999:189). Often township children are greatly disadvantaged by living in severely distressed neighbourhoods with reduced accessibility to formal and informal social supports, high-quality schools and community services (Mampane, 2004:22). Under conditions of numerous serious threats experienced in hostile environments, no child may escape unscathed, no matter how well equipped the child may be temperamentally. Every child has limits (Garbarino *in* Ungar, 2005:xvii).

## 4.8.2 Self-regulated learning questionnaire

A *Self-Regulated Learning Questionnaire (SRLQ)* (see Addendum B) developed by Monteith (North-West University) was used to obtain data on the participants' self-regulated learning. The SRLQ is a pen and paper self-report questionnaire consisting of several subscales designed to assess participants self-regulated learning abilities, such as goal setting, strategic planning, self-recording, self-evaluation and self-reaction. The questionnaire was completed under the supervision of the researcher.

A Likert scale (rating scale) was used as a data recording technique for the responses in this questionnaire to capture the degree to which the participants agreed on a particular statement. Participants were instructed to respond to the items on a 5-point Likert scale which varies from 1 = *not at all like me* to 5 = *very much like me* (see Table 4.6).

**Table 4.6: Likert scale for self-regulated learning questionnaire**

KEY				
1	2	3	4	5
Not at all like me	Not very much like me	Fairly much like me	Much like me	Very much like me

As the SRLQ is based on Barry Zimmerman's phase structure and sub-processes of self-regulation (Zimmerman, 2000:13-35) the sub-scales satisfy both face and content validity (see par. 4.8.2.1). With reference to reliability, the internal consistency for the questionnaire was determined by calculating the Cronbach alpha reliability coefficient based on the data of the participants who participated in this research.

The statements in this questionnaire constituted the sub-scales of goal-setting, strategic planning, self-recording, self-evaluation, and self-reaction:

### Goal setting

Goal setting refers to principle objectives that learners set to attain during learning, and involve the quality, quantity, and rate of task performance (Pintrich & Schunk, 2002:165). The Goal setting scale consisted of 7 items; see Table 4.7 for the items related to this sub-category of self-regulation.



## **Strategic planning**

Strategic planning refers to the selection of learning strategies designed to reach the desired goal and for a skill to be mastered or performed at best; learners need strategies that are suitable for the task and the situation (Zimmerman, 2000:17). The Strategic planning scale consisted of 5 items; see Table 5.8 for the items related to this sub-category of self-regulation.

## **Self-recording**

Self-recording is a record of cognitions or actions being monitored by a learner. Self-recording is a general self-observational technique that can greatly increase the proximity, informativeness, accuracy, and worth of the feedback (Zimmerman, 2000:20). The Self-recording scale consisted of 7 items; see Table 4.9 for the items related to this sub-category of self-regulation.

## **Self-evaluation**

Self-evaluation refers to comparing self-monitoring information with a standard or goal, such as one's prior performance, another person's performance, or an absolute standard of performance (Zimmerman, 2002:68). The Self-evaluation scale consisted of 8 items; see Table 4.10 for the items related to this sub-category of self-regulation.

## **Self-reaction**

The self-reaction features the attitude a learner has toward his/her achievement or success. Self-reactions refer to the various reactions such as self-praise, self-criticism, adaptive strategy use, goal adaptation and goal persistence (Schunk *et al.*, 2010:156). Five items were used in the Self-reaction scale (see Table 4.11).

### **4.8.2.1 Validity of the self-regulated learning questionnaire**

There are various types of validity (see 4.6.1) but for the Self-regulated Learning questionnaire only the face validity and content and construct validity will be discussed.

## **Goal setting**

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy in the Self-Regulated Learning Questionnaire yielded a result of 0.654. The Bartlett's Test of Sphericity for the Self-Regulated

Learning Questionnaire yielded  $p$  values  $< 0.001$  indicating a sufficient correlation structure. Three factors were extracted from the subscale explaining 59.5% of the variance, using Kaiser's criterion.

The communalities for the items related to goal setting in the Self-Regulated Learning Questionnaire lie between 0.152 and 0.568 using the Principal Component Analysis.

The factor analysis identified three related constructs that composed and deal with goal setting (see Table 4.7). Factor 1 focuses specifically on goal setting activities such as effective time management. Factor 2 relates to the goal of setting specific goals or breaking goals into more attainable goals. Factor 3 refers to setting short term goals. The researcher is satisfied that all three factors relate to goal setting, therefore only one construct, **Goal Setting** will be used in further analysis. The amount of variance explained and communalities indicate that this subscale satisfies the criterion of construct validity.

**Table 4.7: Sub-scale: Goal setting**

Items	Pattern Matrix			
	Factor Loading			Communality
	1	2	3	
16. When I have a test to write I study before the time.	0.617		0.260	0.475
2. I complete my assignments before the set dates	0.529			0.284
18. I try to work at a regular pace.	0.490		-0.288	0.320
12. I set specific goals for each section of my work.		0.799		0.568
7. When I set a goal I can't reach, I usually break it up in more achievable (smaller) goals and work at them one at a time until I reach my original goal.		0.386		0.176
33. Before doing an assignment or start preparing for a test/exam, I set a goal which I plan to achieve with the assignment or test/exam.		0.262		0.152
24. I prefer to set short term goals			0.472	0.261

### Strategic planning

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy in the Self-Regulated Learning Questionnaire yielded a result of 0.749. The Bartlett's Test of Sphericity for the Self-Regulated

Learning Questionnaire yielded  $p$  values  $< 0.001$  indicating a sufficient correlation structure. Two factors were extracted from the questionnaire explaining 70.7% of the variance using Kaiser's criterion.

The communalities for the factors related to strategic planning in Self-Regulated Learning lie between 0.129 and 0.458 indicating that acceptable variance has been retained (Hair *et al.*, 1998:331).

**Table 4.8: Sub-scale: Strategic planning**

	Pattern Matrix		
	Factor Loading		Communality
	1	2	
Items			
22. When I prepare for a test, I make sure I know exactly what work to study and what type of questions will be asked.	0.769	-0.237	0.472
19. Before I start studying, I check what I need to do to start learning.	0.470		0.213
20. When doing assignments, I make sure that I know how to follow the guidelines written on the assignment.	0.345		0.192
8. Before doing an assignment, I first read as much on the topic as I can.	0.344	0.227	0.246
23. Before I study new work in a Learning Area, I often scan the work to see how it is organised.	0.332		0.172
35. When doing school work, I make up questions to help focus my studying.	0.275		0.147
14. I first work out an outline before writing the answer to an essay-type question.	0.223		0.098
27. Before doing an assignment, I speak to others (teachers, classmates, family) who know more about the topic than I do.		0.608	0.458
10. When I have to do an assignment, I work out how much time it will take to complete the assignment before I start.		0.365	0.129

The factor analysis identified two related constructs that composed strategic planning (see Table 4.8). Factor 1 relates more to the organising, making up of questions and focusing on the assignment on hand. Factor 2 focuses specifically on strategic planning activities such as reading as much as possible about the topic and relying on teachers, classmates or family to help with the related topic. The researcher is satisfied that both factors relate to strategic

planning, therefore only one construct **Strategic Planning** will be used in further analysis. The amount of variance explained and communalities indicate that this sub-scale satisfies the criterion of construct validity.

### Self-recording

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy in the Self-Regulated Learning Questionnaire yielded a result of 0.740. The Bartlett's Test of Sphericity for the Self-Regulated Learning Questionnaire yielded  $p$  values  $< 0.001$  indicating a sufficient correlation structure. Two factors were extracted from the questionnaire explaining 71.6% of the variance using Kaiser's criterion.

The communalities for the factors related to self-recording in Self-Regulated Learning lie between 0.112 and 0.514 indicating that acceptable variance has been retained (Hair *et al.*, 1998:331).

**Table 4.9: Sub-scale: Self-recording**

	Pattern Matrix		
	Factor Loading		Communality
	1	2	
25. After completing an assignment, I check my work to make sure it is correct.	0.743		0.514
36. I usually check if I have reached all the outcomes after completing work.	0.346		0.112
30. While studying, I know how long (time) it takes me to read or learn a specific number of pages.	0.343		0.141
29. When I study, I make notes of the words or facts I can't remember.	0.322	-0.283	0.275
34. During class, I make notes of important facts or words of the work we discuss.		-0.725	0.452
4. When I study, I make notes about important parts of the work I am studying.		-0.386	0.236
28. When I'm reading work, I stop now and then and go over what I have read.	0.236	-0.313	0.228

The factor analysis identified two related constructs that composed self-recording (see Table 4.9). Both these constructs relate to self-recording. Factor 1 focuses specifically on checking

work or assignments after completion and the amount of time allocated to complete work. Factor 2 relates specifically with making mental or written notes of important information and to check if these objectives have been obtained. As the researcher is satisfied that both factors relate to self-recording, only one construct **Self-Recording** will be used in further analysis. The amount of variance explained and communalities also indicate that this sub-scale satisfies the criterion of construct validity.

### **Self-evaluating**

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy in the Self-Regulated Learning Questionnaire yielded a result of 0.753. The Bartlett's Test of Sphericity for the Self-Regulated Learning Questionnaire yielded  $p$  values  $< 0.001$  indicating a sufficient correlation structure. Two factors were extracted from the questionnaire explaining 68,9% of the variance using Kaiser's criterion.

The communalities for the factors related to self-evaluating in Self-Regulated Learning lie between 0.198 and 0.630 indicating that acceptable variance has been retained (Hair *et al.*, 1998:331).

The factor analysis identified two related constructs that composed self-evaluation (see Table 4.10). Factor 1 focuses specifically on statements that relate to self-evaluation such as what is expected when a test/assignment is due or the results thereof. Factor 2 relates specifically to the person making sure that work is well understood. As the researcher is satisfied that both factors relate to self-evaluating, only one construct **Self-Evaluating** will be used in further analysis. The amount of variance explained and communalities also indicate that this sub-scale satisfies the criterion of construct validity.

**Table 4.10: Sub-scale: Self-evaluating**

	Pattern Matrix		
	Factor Loading		Communality
	1	2	
Items			
1. After I have studied for a test or exam, I have a good idea of what marks I can expect for the test/exam.	0.719		0.480
17. I ask myself questions to make sure I understand the work I have been studying.	0.537	-0.330	0.492
11. When I have to do an assignment, I make sure that I know what is expected of me.	0.499		0.250
15. When I have written a test, I usually have a good idea of how well I have done, even before the test has been marked.	0.453		0.198
5. I check my work to make sure I did it right.	0.410		0.199
21. While studying I ask myself questions about the work I have learned to check if I understand the work.	0.375	-0.448	0.412
26. When studying I try to decide which part of the work I don't understand well.	0.208	-0.404	0.252
31. I often find that I have been studying for some time but I don't know what it is all about.		0.261	0.630

**Self-reaction**

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy in the Self-Regulated Learning Questionnaire yielded a result of 0.587. The Bartlett's Test of Sphericity for the Self-Regulated Learning Questionnaire yielded  $p$  values  $< 0.001$  indicating a sufficient correlation structure. Two factors were extracted from the questionnaire explaining 71,4% of the variance using Kaiser's criterion.

The communalities for the factors related to self-reaction in Self-Regulated Learning lie between 0.111 and 0.303 indicating that acceptable variance has been retained (Hair *et al.*, 1998:331).

**Table 4.11: Sub-scale: Self-reaction**

	Pattern Matrix		
	Factor Loading		Communality
	1	2	
Items			
3. When I am confused about something I am studying (in any Learning Area) I go back and try and figure it out.	0.516		0.256
13. If I realize that I can't solve a problem, I ask someone for help.	0.478		0.220
6. When I see I haven't got enough time to complete a task or assignment, I find more time.	0.408	0.241	0.282
9. When I realize that I don't understand the work I am studying, I change the way I study.		0.570	0.303
32. I try to change the way I study to fit the Learning Area requirements and the educator's teaching styles.		0.306	0.111

The factor analysis identified two related constructs that composed self-reaction (see Table 4.11). Both these constructs relate to self-reaction. Factor 1 focuses specifically on ways to solve problem, whether it be time or work. Factor 2 relates specifically with changing study methods or learning styles. As the researcher is satisfied that both factors relate to self-reaction, only one construct **Self-Reaction** will be used in further analysis. The amount of variance explained and communalities also indicate that this sub-scale satisfies the criterion of construct validity.

#### 4.8.2.2 Reliability of self-regulated learning questionnaire

In this study the Cronbach alpha coefficient (Table 4.12) was calculated for each sub-scale to illustrate the level of internal consistency for each sub-section and to indicate to what extent these items were measuring the same construct. A Cronbach's alpha coefficient of  $\geq 0.80$  indicates that the applicable scale items are highly reliable, while a coefficient of  $\geq 0.50$  to  $< 0.65$  as moderate reliable (Maree & Pietersen, 2007:216). The alpha coefficients for the subsection of Goal setting, Strategic planning, Self-recording and Self-evaluation range from 0.55 to 0.65 and are indicative of a moderate internal consistency. These particular subsections were thus retained for further investigation. The sub-section Self-reaction indicates an alpha coefficient of

0.42 which indicates that it is not of substantive value or does not have a strong internal consistency and was therefore not used in this study.

**Table 4.12: Reliability of the self-regulated learning questionnaire**

<b>Self-regulated learning questionnaire</b>		
	<b>Cronbach's Alpha (<math>\alpha</math>)</b>	<b>Inter-item correlations</b>
Goal-setting	0.55	0.381
Strategic planning	0.65	0.313
Self-recording	0.64	0.314
Self-evaluation	0.62	0.460
Self-reaction	<b>0.42</b>	0.230

### **4.8.3 CYRM Questionnaire**

The *Child and Youth Resilience Measure* (CYRM), (see Addendum C) is a 28-item instrument validated with a purposeful sample of 1451 youth growing up facing diverse types of adversity in 11 countries (Canada, USA, Colombia, China, India, Russia, Palestine, Tanzania, the Gambia and South Africa) (Ungar & Liebenberg, 2005:2, 3). Although an increased number of items do increase reliability values, many published measures contain between four and 20 items (Warner, 2008).

#### **4.8.3.1 Validity of child youth resilience measure (CYRM)**

The CYRM-28 provides a reliable demonstration of general factors related to resilience across all 14 research sites and a more specific understanding of which resources are associated with resilience as an outcome in different contexts. Although all items on the CYRM-28 are reliable measures of resilience across cultures, formation of subscales vary according to the participants' culture, gender, and/or the social structure of their community. The procedures demonstrated through the development of the CYRM-28 may contribute to the methods used to design other measures that will ensure face validity of child and youth development measures across cultures (Ungar & Liebenberg, 2011:144). Questions were arranged into a 5-point Likert scale questionnaire (1= Not at all; 2= A little; 3= Some what; 4= Quite a bit; 5=A lot).



The final version (of 28 questions) is able to fulfill the dual goals of identifying common factors relevant across cultures, while still retaining items that can distinguish sufficiently well the unique aspects of resilience in both western and non-western settings. The different resilience resources consist of Individual, Relational, Community and Socio-Cultural resources.

### **Individual resilience resources**

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy in the Child and Youth Resilience Measure yielded a result of 0.622. The Bartlett's Test of Sphericity for the Child and Youth Resilience Measure yielded  $p$  values  $< 0.001$  indicating a sufficient correlation structure. Two factors were extracted from the questionnaire explaining 68,9% of the variance using Kaiser's criterion.

The communalities for the factors related to Individual Resilience Resources in the Child and Youth Resilience Measure lie between 0.085 and 0.337 indicating that acceptable variance has been retained (Hair *et al.*, 1998:331).

The factor analysis identified two related constructs that composed Individual Resilience Resources (see Table 4.13). Factor 1 focuses specifically how the person sees him/herself in the community and can solve problems on his/her own. Factor 2 relates to how the participants feel about themselves. As the researcher is satisfied that both factors relate to Individual Resources, only one construct **Individual Resilience Resources** will be used for further analysis. The amount of variance explained and communalities also indicate that this sub-scale satisfies the criterion of construct validity.

**Table 4.13: Sub-scale: Individual resilience resources**

	Pattern Matrix		
	Factor Loading		Communality
	1	2	
Items			
23. I think it is important to serve my community.	0.414		0.190
2. I can work together with other people.	0.392		0.161
9. Spiritual (religious) beliefs are important to me.	0.383		0.158
13. I am able to solve problems without harming myself or others (for example by using alcohol/ or being violent).	0.307		0.085
8. I try to finish everything I start.		-0.576	0.337
21. I am aware of my own strengths.		-0.483	0.217
11. People think I am fun to be with.		-0.358	0.217

**Relational resources**

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy in the Child and Youth Resilience Measure yielded a result of 0.570. The Bartlett's Test of Sphericity for the Child and Youth Resilience Measure yielded  $p$  values  $< 0.001$  indicating a sufficient correlation structure. Three factors were extracted from the questionnaire explaining 77.44% of the variance using Kaiser's criterion.

The communalities for the factors related to Individual Resilience Resources in the Child and Youth Resilience Measure lie between 0.096 and 0.551 indicating that acceptable variance has been retained (Hair *et al.*, 1998:331).

The factor analysis identified three related constructs that composed Relational Resources (see Table 4.14). Factor 1 focuses mainly on feelings and support towards friends and family. Factor 2 shows the protection and awareness about individuals. Factor 3 relates to one of the basic needs of an individual. As the researcher is satisfied that all three factors relate to Relational Resources, only one construct **Relational Resources** will be used for further analysis. The amount of variance explained and communalities also indicate that this sub-scale satisfies the criterion of construct validity.

**Table 4.14: Sub-scale: Relational resources**

	Pattern Matrix			
	Factor Loading			Communality
	1	2	3	
Items				
18. My friend(s) stand by me during difficult times.	0.737			0.551
14. I feel my friend(s) support me.	0.623			0.397
6. My parents/ guardians know a lot about me.		0.620		0.362
5. My parents/ guardians watch me closely.		0.509		0.273
12. I talk to my family/ guardians about how I feel.	0.203	0.367		0.201
17. My family/ guardians stands by me during difficult times.		0.323		0.131
24. I feel safe when I am with my family/ guardians.		0.220		0.096
7. If I am hungry there is enough to eat.			0.668	0.487

**Community resources**

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy in the Child and Youth Resilience Measure yielded a result of 0.562. The Bartlett's Test of Sphericity for the Child and Youth Resilience Measure yielded  $p$  values  $< 0.001$  indicating a sufficient correlation structure. Four factors were extracted from the questionnaire explaining 70.14% of the variance using Kaiser's criterion.

The communalities for the factors related to Individual Resilience Resources in the Child and Youth Resilience Measure lie between 0.075 and 0.702 indicating that acceptable variance has been retained (Hair *et al.*, 1998:331).

The factor analysis identified four related constructs that composed Community Resources (see Table 4.15). Factor 1 focuses mainly on education, skills and social situations. Factor 2 concentrates mainly on how en where to seek help in the community. Factor 3 relates mostly to ethical background. Factor 4 focuses on feelings about school and the community. As the researcher is satisfied that all four factors relate to Community Resources, only one construct **Community Resources** will be used for further analysis. The amount of variance explained and communalities also indicate that this sub-scale satisfies the criterion of construct validity.

**Table 4.15: Sub-scale: Community resources**

	Pattern Matrix				
	Factor Loading				Communality
	1	2	3	4	
Items					
25. I have opportunities to develop skills that will be useful later in life (like job skills and skills to care for others).	0.842				0.702
20. I have opportunities to show others that I am becoming an adult and can act responsibly.	0.579				0.358
3. Getting an education is important to me.	0.290				0.135
4. I know how to behave in different social situations.	0.285		0.218		0.153
15. I know where to go in my community/ neighbourhood to get help.		0.594			0.325
19. I am treated fairly in my community.		0.457		0.338	0.402
1. I have people I look up to (role models).					0.362
10. I am proud of my ethnic background.			0.560		0.075
16. I feel comfortable in my school.				0.460	0.210

**Socio-cultural resources**

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy in the Child and Youth Resilience Measure yielded a result of 0.510. The Bartlett's Test of Sphericity for the Child and Youth Resilience Measure yielded  $p$  values  $< 0.001$  indicating a sufficient correlation structure. Two factors were extracted from the questionnaire explaining 61.21% of the variance using Kaiser's criterion.

The communalities for the factors related to Individual Resilience Resources in the Child and Youth Resilience Measure lie between 0.093 and 0.484 indicating that acceptable variance has been retained (Hair *et al.*, 1998:331).

**Table 4.16: Sub-scale: Socio-cultural resources**

	Pattern Matrix		
	Factor Loading		Communality
	1	2	
Items			
26. I enjoy my family's/ guardians cultural and family traditions.	0.627	0.268	0.484
27. I enjoy my community's traditions.	0.421		0.201
22. I participate in organised religious activities.	0.303		0.093
28. I am proud to be (Nationality).		0.496	0.247

The factor analysis identified two related constructs that composed Socio-cultural Resources (see Table 4.16). Factor 1 focuses specifically family traditions and culture. Factor 2 relates to confidence about heritage and nationality. As the researcher is satisfied that both factors relate to Socio-cultural Resources, only one construct **Socio-cultural Resources** will be used for further analysis. The amount of variance explained and communalities also indicate that this sub-scale satisfies the criterion of construct validity.

#### **4.8.3.2 Reliability of child youth resilience measure (CYRM)**

In this study the Cronbach's alpha coefficient (Table 4.17) was calculated for each sub-scale to illustrate the level of internal consistency for each sub-section and to indicate to what extent these items were measuring the same construct. A Cronbach's alpha coefficient of  $\geq 0.80$  indicates that the applicable scale items are highly reliable, while a coefficient of  $\geq 0.50$  to  $<0.65$  as moderate reliable (Maree & Pietersen, 2007:216). The alpha coefficients for the subsection of Individual Resources, Relational Resources and Community Resources range from 0.50 to 0.55 and are indicative of a moderate internal consistency. These particular subsections were thus retained for further investigation. The sub-section Socio-cultural Resources indicates an alpha coefficient of 0.32 which indicates that it is not of substantive value or does not have a strong internal consistency and will not be retained in this study.

**Table 4.17: Reliability of the child and youth resilience measure questionnaire**

<b>Child and Youth Resilience Measure Questionnaire</b>		
	<b>Cronbach's Alpha (<math>\alpha</math>)</b>	<b>Inter-item correlations</b>
Individual Resilience Resources	0.50	0.250
Relational Resources	0.54	0.453
Community Resources	0.54	0.460
Socio-cultural Resources	<b>0.32</b>	0.213

#### **4.8.4 Academic performance**

According to Kobal and Musek (2001:887) there are two broad groups of definitions that are routinely employed in assessing academic performance. The first group could be considered more objective, because it refers to numerical scores of a learner's knowledge, which measures the degree of a learner's adaptation to school work and to the educational system (Kobal & Musek, 2001:887-889). The second group is a more subjective or psychological one, as its determination of academic success is reliant on the learner's attitudes of others, and towards his/her success and him/herself. Therefore, academic achievement could be defined as self-perception and self-evaluation of one's objective academic success (Kobal & Musek, 2001:889).

Participants' academic results (June exam 2010) were retrieved from the SAMS programme used by the school. Permission were granted to the researcher by the principal and SGB of the selected school to use the academic results.

#### **4.9 Variables**

A variable is an event, behaviour or attribute that expresses a construct and has different values (McMillan & Schumacher, 2010:491). A variable that the researcher studies as a possible cause of something else is called an independent variable and a variable that is potentially influenced by the independent variable is called a dependent variable (Leedy & Ormrod, 2005:218).

- **Independent variables used in this study**
  - Self-regulated learning  
With it's individual or separate sections or variables:  
*goal setting,*  
*strategic planning,*  
*self-recording,*  
*self-evaluation.*
  - Resilience  
With it's individual or separate variables:  
individual resources,  
family resources,  
community resources.

- **Dependent variable**

Academic achievement of learners

#### **4.10 Statistical techniques used for the analysis of data**

The data gathered from the questionnaires was statistically analyzed by the Statistical Consultation Service of the North West University. The following statistics were used:

- Factor analysis. With a factor analysis all the independent variables are reduced and summarized in a few factors as variables that correlate with each other are identified (Geduld, 2011:203).
- Cronbach alpha coefficient ( $\alpha$ ). The statistical analysis also involved the calculation of the Cronbach alpha coefficient ( $\alpha$ ) to determine the reliability of the various categories in the questionnaires.
- Correlation Coefficient. A calculation that represents the size and direction of the degree of relationship between two variables (Geduld, 2011:204).
- Multiple regression analysis. Allows the researcher to determine the correlation between a criterion variable and the best combination of two or more predictor variables (Proudfoot, 2011:127).

Analysis of variance. An analysis of variance statistical procedure using two or more independent variables that permits testing each independent variable and the interaction among the variables (McMillan & Schumacher, 2010:487).

#### **4.11 Ethical aspects**

The following ethical aspects were addressed in this study:

- The Fezile Dabi District of the Department of Education sent a formal letter to the researcher granting permission to conduct the research (Addendum D).
- The principal and school governing body of the selected school in the Fezile Dabi District granted permission to conduct the research at the school.
- Letters of assent (Addendum F) were sent out to all the Grade 7, 8 and 9 learners of the selected school in order to receive appropriate permission for participation in the research.
- Letters were sent to all parents of participating learners (Addendum E) to inform them about the intended research and requested their consent for their children to participate.
- Informed consent stressed that all participants had the choice to participate or not and to withdraw at any given time without any fear of punishment, etc.
- The confidentiality of each and every participant was guaranteed and respected. Each participant was given a research number to ensure confidentiality.

The researcher was granted an Ethics number (NWU00063-10-A2) by the North West University (see Addendum D). This Ethics number was granted in accordance with the criteria set out by the North West University's Ethics Committee.

#### **4.12 Administrative procedures**

Permission to conduct the research in the Fezile Dabi District was granted by the Chief Director of the Fezile Dabi District of the Department of Education to conduct the research at a chosen school. A covering letter was provided with informed consent to ensure that each participant was informed of the research process. Each participant was provided with a research number to assist in the categorisation of the data and to ensure confidentiality. The researcher made use of a self developed organised administration system for the completion and filing of questionnaires. The researcher collected all the questionnaires after completion.



The Statistical Consultative Service of the North West University, headed by Dr. Suria Ellis, was consulted and arrangements were made for the statistical processing of the data that were gathered.

### **4.13 Conclusion**

This chapter discussed the theoretical framework of the research together with the way in which the data was collected and the interpretation of the data. The different aspects of the research design were discussed and compared with other research designs. Furthermore the measuring instruments that were used for the collection of data, the validity and reliability of the questionnaires, the techniques and methods used for data analysis, as well as the ethical aspects and administrative procedures which were followed for this research were discussed. The data which were gathered in this research will be discussed in full in Chapter 5.

## CHAPTER 5

### STATISTICAL ANALYSIS AND INTERPRETATION OF DATA

#### 5.1 Introduction

The primary purpose or goal of the empirical research was to determine whether there is a relationship between resilience, self-regulated learning and the academic achievement of learners living under adverse circumstances and if such a relationship exists; what the nature of the relationship is. This primary purpose or goal was divided into the following sub-goals:

To determine:

- the relationship between resilience and the academic performance of learners;
- the relationship between self-regulated learning and the academic performance of learners; and
- the relationship between resilience, self-regulated learning and the academic performance of learners.

#### 5.2 Analysis of data

The data gathered through the Biographical Questionnaire were analysed first (par. 5.2.1) followed by an analysis of the data gathered with the Self-Regulated Learning Questionnaire (SRLQ) (par. 5.2.2), and the Child and Youth Resilience Measure (CYRM) (par. 5.2.3).

##### 5.2.1 Biographical questionnaire

The descriptive analysis of the biographical questionnaire consisted of 18 items and was aimed at analyzing the data regarding the general biographical information of the participants, allowing the researcher to describe the participants and to find out more about their circumstances at home and the neighbourhood they live in (see Table 5.1).

Learners (N≈182) of the Senior Phase (Grade 7, 8 and 9) (see Table 4.6) of a selected General Education and Training School in the Fezile Dabi District (Department of Education: Free State) were invited to participate in the investigation. Although 182 learners (of the enrolled 223 learners) of the Senior Phase were invited and agreed through informed or voluntary assent to complete the biographical questionnaire, only 120 of the learners who assented, were present

on the set date the biographical questionnaire was to be completed, because many learners had transport problems as the questionnaire was completed after school hours. Sixty learners who depended on transport thus didn't complete the biographical questionnaire as they couldn't stay after school to complete the questionnaire, the remaining learners could arrange their transport back home. (After obtaining the consent of the parents and assent of the learners, 180 learners completed the SRLQ and CYRM during school hours on a set date. Hundred and eighty learners completed the SRLQ and only 170 of the initial 180 learners completed the CYRM questionnaire).

The biographical information was analysed according to personal details, family related matters, violence, abuse and community related matters.

### 5.2.1.1 Personal details

The first three questions required the participants to give personal details such as grade, age and gender (see Table 5.1).

From **Table 5.1** it can be inferred that the mean age of the participants was 14 years 3 months with the youngest participant being 12 years 6 months and the oldest participant 17 years 3 months.

The majority of the participants in this study were females (54 percent), while males (46 percent) were in the minority.

**Table 5.1: Biographical information**

Variable		Gender			% of total
		M	F	Total	
Grade	N≈120				
Grade 7		29	22	51	42
Grade 8		18	28	46	38
Grade 9		8	15	23	20
1. Age	N≈120				
12 years		6	12	18	15
13 years		18	16	34	28

Variable		Gender			% of total
14 years		17	21	38	32
15 years		11	7	18	15
16 years		5	2	7	6
17 years		4	1	5	4
2. Gender	N≈120			<b>Total</b>	<b>% of total</b>
Boys				55	46
Girls				65	54

### 5.2.1.2 Family related matters

The purpose of this section of the biographical questionnaire was to understand where, with whom and under what circumstances these participants live.

From **Table 5.2** the following can be inferred with reference to:

- **Parents**

Thirty nine percent (39%) of the participants indicated that they live in a traditional family. A traditional family consists of a mother, father, and their biological or adoptive descendants.

- **Extended families**

Twenty six participants (22%) indicated that they live in extended families. Extended families are those households where parents and their children also live with other family members who include cousins, aunts, uncles and grandparents.

**Table 5.2: Family related questions**

Variable				f	%			
3. Who do you live with? Biological Parents: Mother and Father				47	39%			
Divorced: One parent – Mother / Father				17	14%			
Deceased: One parent – Mother / Father				16	13%			
Grandparents: Both Grandparents				13	11%			
*Only 1 grandparent – Grandfather / grandmother + other family members, e.g. cousins, uncles, aunts etc.				13	8%			
*Family Member + Other family members, e.g. cousins, uncles, aunts etc.				13	11%			
Other - Siblings				4	3%			
Number of people				1-2	3-4	5-6	7-8	9-10
4. How many people live in your house?				16	24	49	22	9
5. How many <b>bedrooms</b> in your house?				54	50	-	-	-
				Yes	No			
6. Do you have care after school?				102	18			
7. Must you take care of brothers and sisters after school?				67	44			
11. Is there someone in your household that is severely ill?				41	72			
18. Do you sometimes go to bed hungry because of lack of food?				39	81			

\* These questions related to extended families

- **Grandparents as caregivers**

Thirteen participants (19%) indicated that they live with their grandparents only. Sometimes children are raised by their grandparents when their biological parents have died or no longer can take care of them. Many grandparents take some primary responsibility for child care, particularly when both parents work away from home.

- **Siblings**

Three percent (3%) of the participants indicated that they live with older siblings, thus a child headed household. Child headed households are generally considered to be those where the main caregiver is younger than 18 years of age.

- **Overcrowding**

Fifty four participants (45%) indicated that they live in two-bedroom homes and that there are more than 7 people living in their homes.

- **After school care**

Eighteen participants (15%) indicated that they are alone at home after school until their parents come home from work.

From these results it seems that many of the participants (33%) in this study are deprived from the privilege of living in a home with their own parents. Adolescents living in a positive supportive relationship with their parents or guardians adapt better and deal with trauma (violence, abuse etc.) much better (see par. 2.2). Parents or guardians who satisfy their adolescent children's emotional and material needs also contribute to well balanced adolescents.

### **5.2.1.3 Violence**

Due to the sensitivity of the following aspects (violence and abuse) of the biographical questionnaire the researcher thought it necessary that the questions posed must only be a 'yes' or 'no' answer. The following questions required only a "yes" or "no" answer (see Table 5.3 and Table 5.4).

Many children experience or observe violence within the confines of their own homes or within their own neighbourhoods.

**Table 5.3: Violent acts**

	Yes	No	Daily	More than 3 times a week
8. Do you feel safe in the neighbourhood you live?	17	103	-	-
9. Are there street gangs in your neighbourhood?	13	107	-	-
19. Are there violent acts in your house between adults?	84	36	41	67
20. Have you witnessed any violence in your street or neighbourhood?	53	67	47	17

From **Table 5.3** it can be inferred that most participants have experienced some sort of violence, either between members of the household or in the neighbourhood. Thirty four percent (34%) of participants indicated that violent acts took place in their households on a daily basis and 72% of participants indicated that they saw or experience violence in the community on a regular basis.

#### 5.2.1.4 Abuse

Children are abused in a wide range of settings – in the township, in their family, at school or on the streets (see Table 5.3) which has a negative effect on their lives.

**Table 5.4: Abuse**

	Alcohol or drugs	Yes	No	Daily	More than 3 times a week
12. Do the adults in your house use alcohol or drugs?	Mostly drinking and smoking of marijuana	63	57		
How often do they use alcohol or drugs?	Drinking: 71% Other: 29%	-	-	45	51

	Alcohol or drugs	Yes	No	Daily	More than 3 times a week
			Yes		No
14. Have you been abused physically?			30	90	
How many times have you been abused physically	Once Male=9 Female=7	Twice Male=2 Female=0	3 Male=3 Female=0	More Male=5 Female=2	
			Yes		No
15. Have you been abused sexually?			17	94	
How many times have you been abused sexually	Once Male=1 Female=4	Twice Male=0 Female=0	3 Male=0 Female=2	More Male=3 Female=7	

From **Table 5.4** it can be inferred that 63 participants indicated that alcohol and drug abuse took place in the household they live in. From the 63 participants 73% indicated that the use of alcohol or marijuana took place on a daily basis.

Fourteen percent of participants have been sexually abused of which 12 participants (3 male and 9 female) indicated that this abuse had taken place more than once. Twenty five percent (25%) participants have been physically abused by an older member of the household. From Table 5.3 it is clear that more males are physically abused (4%) and more females are sexually abused (6%) on a regular basis.

#### **5.2.1.5 Community related matters**

Sixty seven percent (67%) of the participants attend church on Sundays and activities organised by the church. Eleven percent (11%) of participants also attend private soccer clubs in the townships. Because of the fast growing population in the townships the planning of recreational facilities for children and adolescents is inadequate. If the existing schools and churches do not provide activities for these learners, boredom sets in which can lead to delinquency.

From the biographical study it is clear that many learners face adverse circumstances every day. For an adolescent to show any resilience he or she has to face adversity or risks in life and respond adaptively to these risks. The risks which the participants faced included amongst



others overcrowding, abuse (alcohol and drugs), violence (household and neighbourhood) or parental death (single parents or living with family members). For adolescents who grow up in the townships of South Africa, the presence of risk is commonplace and often escalates on a daily basis. Although risk processes are intimidating and threatening, a positive aspect develops from this the possibility for resilient behaviour to be found in such negative conditions.

### 5.2.2 Self-regulated learning

The mean of the five-point scale of the Self-Regulated Learning questionnaire was interpreted according to three groupings to facilitate an analysis of high and low values. A mean of 1.5 or less was interpreted as a low value while a mean of 3 indicated a moderate value, with a mean of 4.5 indicating a high value. These high or low values served as a point of reference within the five-point scale as indicators of low or high values.

The self-regulatory strategies of goal setting (mean=3.26), strategic planning (mean=3.04), self-evaluation (mean=3.29) and self-reaction (mean=3.19) (see **Table 5.5**) indicated moderate means, which may be interpreted to mean that the participants in this study indicated that they may have used these strategies in their school work or for study purposes (academic performance).

**Table 5.5: Descriptive statistics self-regulated learning variables**

Variable	Valid N	Mean	Minimum	Maximum	Std. Dev.
SRL (Total score)	180	3.13	1.69	4.33	0.53
Goal-setting	180	3.26	1.43	4.86	0.64
Strategic Planning	180	3.04	1.333	4.67	0.65
Self-Evaluation	180	3.29	1.63	4.75	0.60
Self-Reaction	180	3.19	1.40	4.80	0.69

### 5.2.3 Resilience

The mean of the five-point scale of the Child and Youth Resilience Measure was interpreted according to three groupings to facilitate an analysis of high and low values. A mean of 1.5 or less was interpreted as a low value while a mean of 3 indicated a moderate value, with a mean

of 4.5 indicating a high value. These high or low values served as a point of reference within the five-point scale as indicators of low or high values.

The CYRM variables of individual resources (mean=3.63), family resources (mean=3.68) and community resources (mean=3.44) (see Table 5.6) indicated moderate means, which may be interpreted to mean that the participants in this study indicated that they may have used these resources when conditions considered it necessary.

**Table 5.6: Descriptive statistics of resilience variables**

Variable	Valid N	Mean	Minimum	Maximum	Std. Dev.
CYRM (Total score)	173	3.64	2.36	4.73	0.43
Individual resources	173	3.63	1.67	5.00	0.60
Family resources	173	3.68	2.25	4.75	0.59
Community resources	173	3.44	0.0	5.00	0.82

## 5.2.4 Academic performance

The academic mean of 55.75 were calculated for the 1<sup>st</sup> and 2<sup>nd</sup> term (see Table 5.7).

**Table 5.7: Descriptive statistics: academic performance: all groups**

Variable	Valid N	Mean	Minimum	Maximum	Std. Dev.
1 <sup>st</sup> Term	182	55.80	23.00	83.00	13.26
2 <sup>nd</sup> Term	182	55.69	23.00	83.00	12.03
Academic Mean*	182	55.75	23.00	83.50	12.63

\* The mean of the 1<sup>st</sup> and 2<sup>nd</sup> Term

### 5.3 The relationship between self-regulated learning and academic performance

To determine the relationship between self-regulated learning and academic performance correlation coefficients were calculated between the self-regulated learning variables and academic performance (see Table 5.8). A correlation of 0.1 or less was interpreted as a low value while one of 0.30 was interpreted as a medium relationship (Cohen *et al.*, 2007:528).

**Table 5.8: Correlation coefficients between self-regulation and academic performance**

Variable	Correlation coefficient with academic mean (r)	p-value
Goal-setting	0.22*	p=0.005
Strategic Planning	0.25*	p=0.001
Self-recording	0.09	p=0.208
Self-Evaluating	0.25*	p=0.001

\*Marked correlations are significant at  $p < .05000$  (N=170)

As can be inferred from **Table 5.8** it is clear that a moderate correlation was visible between academic performance and three self regulated learning strategies, namely: goal setting (0.22), strategic planning (0.25) and self-evaluating (0.25). Self-recording leans towards a very low mean (0.097). It is thus clear that a positive correlation or relationship existed between the three strategies of self-regulated learning: *goal-setting, strategic planning and self-evaluating* and academic performance. No correlation between *self-recording* and academic performance was found.

### 5.4 The relationship between resilience and academic performance

To determine the relationship between resilience and academic performance correlation coefficients were calculated between the resilience variables and academic performance (see Table 5.9). A correlation of 0.1 or less was interpreted as a low value while a correlation of 0.3 indicated a moderate value.

**Table 5.9: Correlation coefficients between resilience and academic performance**

Variable	Correlation coefficient with academic mean (r)	p-value
Individual resources	0.06	p=0.412
Family resources	0.07	p=0.333
Community resources	0.16*	p=0.040

\*Marked correlations are significant at  $p < .05000$  (N=170)

From **Table 5.9** it can be inferred that a low correlation was visible between academic performance and the resilience resources, that is: *individual resources* (0.06), *family resources* (0.07) and *community resources* (0.16). The correlation coefficients between respectively *individual* and *family resources* and academic performance are not statistically significant. It is thus clear that no relationship existed between respectively *individual* and *family resources* and academic performance; however a statistically significant correlation exists between *community resources* and academic achievement.

## **5.5 The relationship between resilience, self-regulated learning and academic performance**

To answer the research question (see par. 1.3) a multiple regression analysis was performed (see Table 5.10) to determine if there was a relationship between self-regulated learning, resilience and academic achievement.

### **5.5.1 Multiple regression analysis**

A stepwise linear regression analysis was performed to determine the collective and individual contribution of the self-regulated and resilience variables to academic performance. The coefficient of determination  $R^2$  was used as a measure of practical significance. As guidelines for the interpretation of practical significance it may be assumed that  $R^2 = 0.01$  means that 1 percent of the variances in academic performance is explained by a specific variable which is a small effect. Thus  $R^2 = 0.1$  is equal to 10 percent of the variance explained, which means that

there is a medium effect. With  $R^2 = 0.25$ , 25 percent of the variance is explained, which means there is a large effect which is significant for any description.

A forward stepwise multiple regression analysis was performed (see Table 5.10) to determine if there was a *relationship between self-regulated learning, resilience and academic performance*. An analysis of Table 5.11 reveals that the set of independent variables explains 9% percent ( $R^2=0.091$ ;  $R^2_{adj} = 0.074$ ) of the variance.

**Table 5.10: Standard regression analysis predicting academic performance**

N=170	b*	Std. Err of b*	b	Std. Err. of b	t(165)	p-value
Intercept			31.0054	6.3053	4.9174	0.000002
Strategic Planning	0.1601	0.0908	3.2167	1.8240	1.7635	0.079654
Self-evaluating	0.1338	0.0920	2.855	1.9642	1.4536	0.147936
Community resources	0.1097	0.0756	1.6992	1.1714	1.4505	0.148804
Regression Summary for Dependent Variable: Academic mean $R=0.3015$ $R^2=0.0909$ Adjusted $R^2=0.0745$ $F(3,166)=5.5323$ $p<0.00121$ Std. Error of Estimate: 12.199						

The strategic planning ( $b^*=0.16$ ), self-evaluation ( $b^*=0.13$ ) and community ( $b^*=0.10$ ) were retained by the forward step wise regression analysis as indicators of components that have a medium effect on the academic performance of the participants.

By using a forward step regression the best subset of independent variables i.e. the smallest subset of variables from the SRLQ and CYRM variables that contributes most to  $R^2$ , was identified (see Table 5.10). These variables were *strategic planning, self-evaluation and community resources*. From **Table 5.11** it is clear that *strategic planning, self-evaluation and community resources* together explained about 9.1 percent of the variance in academic performance ( $R^2=0.0909$ ). Of these three variables *strategic planning* contributed the most to  $R^2$  (6.33 percent;  $R^2=0.633$ ) while *self-evaluating* contributed to 1.6% ( $R^2=0.0161$ ) and *community resources* 1.1% ( $R^2=0.0115$ ) of the variance (see Table 5.11).

**Table 5.11: Forward stepwise regression analysis with academic performance as predictor variable**

Variable	Step +in/-out	Multiple R	Multiple R-square	R-square change	F – to entr/rem	p-value	Variables included
Strategic Planning	1	0.2516	0.0633	0.0633	11.3492	0.0009	1
Self-Evaluating	2	0.2817	0.0794	0.0161	2.9188	0.0894	2
Community resources	3	0.3015	0.0909	0.0115	2.1040	0.1488	3
R <sup>2</sup> =0.0909							

### 5.5.2 Analysis of variance

A 2-way ANOVA was performed to determine if there was a difference between the academic performance of participants of respectively low and high in resilience and self-regulated learning (see Table 5.12).

To divide the participants in groups of low and high SRL as well as low and high CYRM, descriptive were calculated (see Table 5.12). Participants with values below the lower quartile were considered to be in the lower group and those with values above the upper quartile as high.

**Table 5.12: Quartile values used to divide the participants in low and high groups**

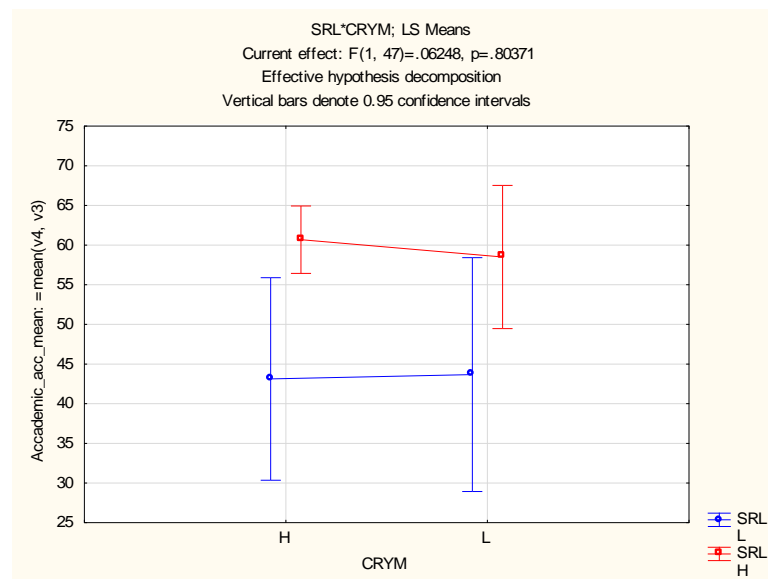
	Valid N	Mean	Median	Minimum	Maximum	Lower Quartile	Upper Quartile	Std. Dev.
SRLQ	180	3.13	3.18	1.69	4.331	2.75	3.50	0.53
CYRM	173	101.92	100.00	66.00	132.46	93.00	111.00	12.031

From **Table 5.13** it is clear that resilience and self-regulated learning have no statistically significant interaction effect and that resilience also has no significant main effect, while self-regulated learning has a statistically significant main effect. Figure 5.1 also shows that there is no interaction between resilience and self-regulated learning and that academic performance is higher for the group that is high on self-regulation than for the group low on self-regulation. It

can therefore be concluded that the more self-regulated learners performed academically better, i.e. achieved a higher academic mean, than the less self-regulated learners.

**Table 5.13: Tests of significance for academic performance**

Effect	SS	Degree of freedom	MS	F	p
Intercept	57633.36	1	57633.36	357.69	0.000000
SRLQ	1425.11	1	1425.11	8.8447	0.00462
CYRM	3.65	1	3.65	0.0226	0.88102
SRLQ*CYRM	10.07	1	10.07	0.0625	0.80370
Error	7572.93	47	161.13	-	-



**Figure 5.1: Inter-action between SRLQ and CYRM**

A t-test was then calculated to determine whether the difference in academic performance between high self-regulated and low self-regulated participants, thus between learners who are more self-regulated and learners who are less self-regulated is of statistical significance (see Table 5.13).

**Table 5.14: T-test**

Variable	Mean L	Mean H	t-value	df	p	Valid N L	Valid N H	Std.Dev. L	Std.Dev H
Academic Mean	45.67	59.37	3.3582	71	0.0013	12	61	10.33	13.34

From **Table 5.14** it can be concluded that Self-Regulated Learning has a statistically significant effect on the academic performance of the participants which proves to be also of practical importance (Cohen's d-value=1.03). Thus, more self-regulated learners achieved higher scores or academic means than less self-regulated learners.

## 5.6 Conclusion

Three instruments were used to collect the data from the participants for this quantitative study, that is, a biographical questionnaire (par. 4.8.1), Self-Regulated Learning Questionnaire (SRLQ) (par. 4.8.2) and the Child and Youth Resilience Measure (CYRM) (par. 4.8.3). The data of the SRLQ and the CYRM were then statistically analysed in order to address the research question (par. 1.3) which had been posed: *How do learners living in a township (i.e. under adverse circumstances and typically without support systems) find ways to demonstrate resilience and whether they self-regulate their academic work?* This was achieved by examining:

- *The relationship between resilience and the academic performance of learners.* A low correlation was visible between academic performance and the resilience resources, that is: *individual resources* (0.06), *family resources* (0.07) and *community resources* (0.16) (see Table 5.9). A statistically significant correlation exists between *community resources* and academic achievement. Taking into consideration the literature study Resilience (see Chapter 2) and specifically the influence that the *community resources* (see par. 2.4.3) (community structures such as schools, church, recreation clubs, sport activities, etc.) have on the participants the outcome shows a minor influence on the academic performance of learners. Resilience is based on an individual's capacity to navigate himself/herself towards protective resources that are made available to him/her by their community in a cultural meaningful way (see par. 2.4.5). Learners need family, community and culture that will support them in their journey to resilience, and who will return what they negotiate for.



- *The relationship between self-regulated learning and the academic performance of learners.* A moderate correlation was visible between academic performance and three self regulated learning strategies, namely: *goal setting* (0.22), *strategic planning* (0.25) and *self-evaluating* (0.25) (see Table 5.8). From the literature study on Self-Regulated Learning (see Chapter 3) Zimmerman (2000:16) developed a cyclical model of self-regulation from a social-cognitive theory in three cyclical phases: *forethought*, *performance control* and *self-reflection* (see par. 3.4). It is clear from the statistical results that two strategies (*goal setting* and *strategic planning*) from the *forethought* phase and one strategy, namely *self-evaluating* from the *self-reflection* phase had a moderate influence on the academic performance of participants. The ability to have *forethought* about their actions allowed participants to motivate and guide their actions, in a preventative manner. The fact that *goal-setting* and *strategic planning* had a moderate influence on their academic performance demonstrated that participants thought about their task actions and analysed the tasks ahead, by setting goals regarding the task and by formulating a plan to reach these goals.

*The relationship between resilience, self-regulated learning and the academic performance of learners.* By using a forward step regression the best subset of independent variables i.e. *strategic planning*, *self-evaluation* and *community resources* together explained about 9.1 percent of the variance in academic performance ( $R^2=0.0909$ ) (see Table 5.10) and were used as indicators of components that have a medium effect on the academic performance of the participants.

# CHAPTER 6

## SUMMARY, RESULTS AND RECOMMENDATIONS

### 6.1 Introduction and statement of problem

Many adolescents from township schools in South Africa face adverse circumstances. Many of these learners find it difficult to succeed in school, while others experience little or no problems academically. Researchers have often asked why some learners are willing to persist and to work hard academically to overcome the impact of their learning obstacles while others give up, thus within the context of this study, how resilience and self-regulation may contribute to overcoming obstacles.

The goal of this research was to determine whether there is a relationship between resilience, self-regulated learning and the academic performance of learners living under adverse circumstances and if such a relationship exists what the nature of the relationship is.

This chapter is structured as follows:

- Introduction and statement of problem (par. 6.1)
- Review of literature (par. 6.2)
  - Resilience (par. 6.2.1)
  - Self-Regulated Learning (par. 6.2.2)
- Method of Research (par. 6.3)
  - Research Design (par. 6.3.1)
  - Participants (par. 6.3.2)
  - Instruments (par. 6.3.3)
  - Statistical Analyses (par. 6.3.4)
- Findings (par. 6.4)
- Limitations of the study (par. 6.5)
- Recommendation (par. 6.6)
- Concluding Statement (par. 6.7)

## 6.2 Review of literature

### 6.2.1 Resilience

Resilience can be defined (see par. 2.2) as a dynamic developmental process of adolescents adapting well to adversities (Boyden & Mann, 2005:9; Fergus & Zimmerman, 2005:401; Howard & Johnson, 2000; Masten & Powell, 2003:16; Masten & Reed, 2005:76). The wellness of adolescents depends on their ability to cooperate, negotiate, and live in harmony with other people, but also on the availability and accessibility of linked protective resources (see par. 2.2). Protective resources appear to be the building blocks of resilience depending on transactions made between the individual and protective resources. Adolescents do not only make use of protective resources, but more importantly use them in a culturally meaningful way (Boyden & Mann, 2005:9; Ungar & Liebenberg, 2005:220; Schoon, 2006:6; Cameron *et al.*, 2007:285, 95; Ungar *et al.*, 2008:2). These protective resources (see par. 2.4) include:

- **Individual resources contributing to resilience**

Individual Resilience Resources (see par. 2.4.1) include problem-solving skills, good attitude, good inter-personal skills, flexible personality and a good self-image. Resilient adolescents are active, charismatic and inspire participation of their peers. A resilient adolescent has good communication skills and this facilitates good social interaction. Resilient adolescents have goals, educational aspirations, persistence, hopefulness, and a sense of a bright future (Krovetz, 1999:121; Theron, 2004:317-318; Masten & Reed, 2005:82; Ungar, 2005:xxv).

- **Family and relational resources**

The family environment is probably one of the most important influences in the psychological development of adolescents. Relationships, within the family, (see par. 2.4.2) play a vital role in enhancing resilience in adolescents. Resilience-promoting relationship factors and/or processes include love, guidance, security, advice and support, and a close bond with parents, the extended family and other caregivers (Masten & Reed, 2005:82; Ungar, 2005:xxv; Schoon, 2006:9-15).

When a family has a strong, coherent, and consistent set of values in the form of a religious beliefs or a consistent set of (high) expectations, rules, and structure within the family, this serves as a protective factor for adolescents (Donald *et al.*, 2010:224).

- **Environmental and Community Resources**

The environment beyond the family also provides important opportunities for support and maturity in adolescents. It is very important for the environment and communities (see par. 2.4.3) to play a part in an adolescent's life as they can provide extra support, for example in the form of caring adults, mentors and a variety of different opportunities, e.g. sport, recreation, libraries etc. (Boyden & Mann, 2005:7; Killian, 2004:43; Masten & Powell, 2003:13). In addition, communities can also give the adolescents the opportunity to interact with positive peers, who in turn can give them advice and support. Community networks acts as a general protective factor for adolescents and have important functions (Masten & Powell, 2003:13; Boyden & Mann, 2005:7).

- **Socio-cultural Resources**

There are multiple cultural resources (see par. 2.4.4) that can encourage resilience. These include cultural and ethnic pride (also found in family rituals, religion, faith and traditions) which are taken over by the next generation and which help adolescents to feel grounded and give them a way to understand and cope with their worlds (including adversity) (Dass-Brailsford, 2005:583; McCubbin & McCubbin, 2005:40; Ungar *et al.*, 2008:8).

Culture provides a sense of support and security, often relating to traditions and community or family-based rituals. A sense of identity is formed when adolescents experience that their cultural rituals and routines persist and when they are able to identify with these cultural rites and practices. Resilience is further encouraged when adolescents have trust in their cultural beliefs and rely on spiritual traditions (religion, faith, ancestral worship) as they feel this enables them to cope (Kumpfer, 1999:199; Howard & Johnson, 2000; Myers, 2000:236; Williams, 2002:200; Killian, 2004:46; Boyden & Mann, 2005:8).

Resilient adolescents can rise above hardships by adjusting positively to challenging situations because they have both personal capacity and ecological support (that is, support from family, friends, and community and cultural resources) (Cameron *et al.*, 2007:285; Dass-Brailsford, 2005:574).

## 6.2.2 Self-regulated-learning

Self-regulated learning refers to the process by which learners personally activate and sustain behaviours, cognitions, and affects that are systematically orientated toward the attaining of goals (Pintrich & Schunk, 2002:408). From a social cognitive perspective (see par. 3.3) (see Figure 3.1). Zimmerman (1989:329) defines self-regulated learning as the degree learners to which learners are meta-cognitively, motivationally and behaviourally active participants in their own learning. Within the social cognitive framework the assumption exists that learners learn by being part of a community (e.g. school, family) and through processes that motivate learners and influence their attitudes. Behavioural self-regulation involves self-observing and strategically changing performance processes, such as the method of learning used by an adolescent (e.g. making summaries or brain charts) (Zimmerman, 2000:14). Environmental self-regulation refers to a learner's ability to observe and then adjust environmental conditions or outcomes in order to maximise his/her learning activities, while covert self-regulation involves monitoring and adjusting cognitive and affective states.

To support a better understanding of the structure of self-regulation and its relation to academic motivational beliefs, Zimmerman (2000:16) developed a cyclical model of self-regulation from a social-cognitive perspective (Cleary & Zimmerman, 2004:538). According to Zimmerman (1998:4) self-regulated learning consists of three cyclical phases (see par. 3.4), namely: *forethought* (i.e., processes that precede any attempt to perform), *performance control* (i.e., processes occurring during learning efforts), and *self-reflection* (i.e., processes occurring after learning or performance) (Cleary & Zimmerman, 2004:538) (see Figure 3.2). Each of these phases consists of several sub-phases.

The forethought phase includes two sub-phases being task analysis (see par. 3.4.1.1) and self-motivation beliefs (see par. 3.4.1.2). Learning tasks differ in terms of content, procedures, organization and social requirements. Completion of learning tasks therefore requires task analysis. Task analysis includes goals-setting and strategic planning.

Goal setting refers to principle objectives that learners set to attain during learning, and involve the quality, quantity, and rate of task performance this involves a standard or criteria set by the learner prior to or during task performance (Schunk & Zimmerman, 1998:190; Pintrich & Schunk, 2002:165).

Strategic planning refers to the selection of learning strategies or methods designed to reach the desired goal and for a skill to be mastered or performed at best. Learners need strategies that are suitable for the task and the situation (Zimmerman, 2000:17).

The second sub-process relates to self-motivation beliefs consisting of self-efficacy, outcome expectations, intrinsic value and learning goal orientation. Self-efficacy refers to a learner's belief in his ability perform a learning task in a manner in which all objectives are accomplished and is seen as a key variable in Zimmerman's model of self-regulated learning (Zimmerman, 1989:330). Outcome expectations indicate a learner's knowledge that a particular performance can result in a certain outcome which refers to the 'effects' of certain acts. Intrinsic interest (also known as 'valuing') refers to a learner's valuing of the task for its own merits or its own sake. Goal orientation is defined as 'an integrated pattern of beliefs that leads to different ways of approaching, engaging in and responding to achievement situations' (Proudfoot, 2011:63).

Phase two of Zimmerman's model for self-regulated learning is the performance or volitional phase (which is the doing part of includes two sub-processes, self-control and self-observation (see par. 3.4.2). It includes the capacities and attitudes to instruct one self and seek help to learn, the self-management of tasks, the creation of processes for learning and the structuring of the environment in order to learn. Imagery, self-instruction, attention focusing and task strategies are all part of self-control (see par. 3.4.2.1), whereas self-recording and self-experimentation form part of self-observation (see par. 3.4.2.2).

The third phase of Zimmerman's cyclical model for self-regulated learning is known as the self-reflection phase During self-reflection learners evaluate their progress by comparing their performances to their goals (see par. 3.4.3) and consists of two sub-processes namely self-judgment and self-reaction. Self-judgment (see par. 3.4.3.10) involves self-evaluating one's performance and adds necessary meaning to the results (Zimmerman, 2000:21). Self-reaction (see par. 3.4.3.2) includes behavioural, cognitive, and affective responses to self-judgments (Pintrich & Schunk, 2002:79).

Reflecting on one's learning does not solely imply afterthought for learners; but at the same time functions as the foundation for further or future learning through its impact on the forethought phase for the next learning task to be completed.

## **6.3 Method of research**

### **6.3.1 Research design**

To adhere to the purpose and research question of this study a quantitative research approach with an ex post facto research design was chosen. An ex post facto research design was appropriate as this study investigated already established conditions, and did not manipulate any variables.

### **6.3.2 Participants**

All the learners (N≈182) of the Senior Phase (Grade 7, 8 and 9) of a selected General Education and Training School in the Fezile Dabi District (Department of Education: Free State) participated in this research study. Although all 182 learners of the Senior Phase were invited and agreed through informed or voluntary assent to complete the biographical questionnaire only 120 of the learners, who assented, were present on the set date the biographical questionnaire was to be completed, because many learners had transport problems as the questionnaire was completed after school hours. Sixty learners who depended on transport thus didn't complete the biographical questionnaire as they couldn't stay after school to complete the questionnaire. The remaining 120 learners could arrange their transport. Hundred and eighty learners completed the SRLQ but only 170 of the initial 180 learners completed the CYRM questionnaire.

### **6.3.3 Instruments**

Three instruments were used to collect data from the participants in order to answer the research question. The first instrument was a biographical questionnaire (see par. 5.2.1), the second instrument was a Self-regulated Learning questionnaire (SRLQ) (see par. 5.2.2) (Monteith, NWU) and the final instrument was the Child and Youth Resilient Measure (CYRM) (see par. 5.4) (Ungar & Liebenberg, 2011:126-149).

The SRLQ is based on Barry Zimmerman's model of self-regulated learning (Zimmerman, 2000:13-35). Both the SRLQ and the CYRM satisfy face and content validity. With reference to reliability, the internal consistency for the two instruments was determined by calculating the Cronbach alpha reliability coefficient.

### 6.3.4 Statistical analysis

- Descriptive statistics were calculated to analyse the biographical data.
- To determine the relationship between resilience, self-regulated learning and academic performance correlation coefficients were first calculated between the resilience; self-regulated learning variables and academic performance (see Table 5.8 and Table 5.9).
- A stepwise linear regression analysis was then performed to determine the collective and individual contribution of the self-regulated and resilience variables to academic performance (see Table 5.11).
- A 2-way ANOVA was performed to determine if there was a difference between the academic performance of participants of respectively low and high in resilience and self-regulated learning (see Table 5.12).
- A t-test was then calculated to determine whether the difference in academic performance between high self-regulated and low self-regulated participants, thus between learners who are more self-regulated and learners who are less self-regulated is of statistical significance (see Table 5.13).

## 6.4 Results

- **Description of participants**

The biographical information was analyzed according to personal details, family related matters, violence, abuse and community related matters. From the biographical study it is clear that many learners face adverse circumstances every day. For adolescents who grow up in the townships of South Africa, the presence of risk is commonplace and often escalates on a daily basis. The risks which the participants faced included amongst others overcrowding, abuse (alcohol and drugs), violence (household and neighbourhood) or parental death (single parents or living with family members).

- **The relationship between resilience and the academic performance of learners**

No relationship was found between respectively *individual* and *family resources* and the academic performance of the participants; however *community resources* contributed to having moderate effect on the participants' academic performance.



- **The relationship between self-regulated learning and the academic performance of learners**

A moderate relationship was found between the three variables of self-regulated learning: *goal-setting, strategic planning and self-evaluating* and academic performance. No relationship was found between *self-recording* and academic performance.

- **The relationship between resilience, self-regulated learning and the academic performance of learners**

With the stepwise regression analysis it was found that only three variables contributed to the participants' academic performance. These variables were *strategic planning, self-evaluation* and *community resources*.

- It was also found that learners or participants who were more self-regulated performed academically better than participants who were less self-regulated.

## **6.5 Limitations of study**

- The English language of the original CYRM and SRLQ was slightly changed (after a group of 12 learners were asked to read and complete the questionnaires prior to the set date of completion) to make questions more understandable and less confusing for the adolescents. Although the wording of the questions of the CYRM and SRLQ were clarified and simplified, it was still evident to the researcher that, at times, the participants were unsure of what was being asked of them or they did not understand the vocabulary used.
- A qualitative phase consisting of interviewing the participants on resilience and self-regulated learning may have clarified their understanding of the questionnaires and may have shed more light on their resilience and self-regulation abilities.
- No information about the participants, other than what was obtained from the biographical questionnaire, was available to the researcher. Involving teachers could have given the researcher more viewpoints about the participants and their learning abilities. Teachers can provide valuable information about learners in the classrooms

which could have been of great value in support of this research as it also involves the academic performance of learners.

- Although the participants reside in a township they attend a former Model C school in town. Involving learners which reside in the township and attend township schools may differ in the outcomes of similar research and analyses.
- Due to unforeseen circumstances only 120 of the 180 learners could complete the biographical questionnaire. The only time available to complete the biographical questionnaire was after school hours. Most learners make use of public transport to take them home. These learners reside in a township a few kilometers away from school. The transport is usually paid in advance and therefore these sixty learners had to leave straight after school because to walk home was not safe.

## **6.6 Recommendations**

- Involving community members like pastors, nurses etc. or family members to participate, through means of interviews, may provide a better understanding of community matters and problems that may impact on resilience and self-regulation.
- From a resilience perspective it is recommended that learners should be made aware of the resources available to them and should therefore be informed how to negotiate for support seeing that in this study *community resource* contributed to the academic performance of participants.
- From a self-regulated learning perspective, teachers in classrooms should make learners more aware of the abilities they have inside them to become self-regulated learners, to know that they can be more successful academically and that they are able to handle personal difficulties because they are actively engaged in their own learning. Teachers could provide care and support so that learners have a sense of belonging at school that protects them from being alienated because of adverse circumstances.

## **6.7 Concluding statement**

Adversity is a human phenomenon that affects learners. Learners have feelings, hopes and aspirations. They often feel hopeless, with dented images and behaviours a reality that impacts

deeply on the lives of learners. Teachers are not always aware of the life that learners live outside the school yard. Teachers often put pressure on learners to perform better. Sadly in townships in South Africa adversity which learner's faces form a major part of their lives.

For resilient adolescents to be able to navigate and negotiate for resources to support them and for these learners to be able to self-regulate their learning, being able to apply learning strategies so that their academic performance might improve is not an easy task. Through this study it became clear that learners are not always aware of the budding potential inside themselves. They are sometimes so weighed down by adverse circumstances that their 'navigating skills' are but a naught or they may not be obvious.

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## APPENDIX A

### BIOGRAPHICAL QUESTIONNAIRE

Answer all the questions. There is no right or wrong answers.

1. How old are you?	12	13	14	15	16
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2. Male or	
Female	

3. Who do you live with?	<b>Biological Parents</b>	<b>One Parent</b>	<b>Grandparents</b>	<b>Family Member</b>	<b>Other</b>
	Mother and father	Mother	Both		Siblings
		Father	Grandmother		
		Death	Grandfather		
		Divorced			

4. How many people live in your house?	2	3	4	5	6	7	8	More
--	---	---	---	---	---	---	---	------

5. How many bedrooms in your house?	2	3	4	More
-------------------------------------	---	---	---	------

6. Do you have care after school?	Yes	No
-----------------------------------	-----	----

7. Must you take care of brothers and sisters after school?	Yes	No
---	-----	----

8. Do you feel safe in the neighbourhood you live?	Yes	No
--	-----	----

9. Are you involved in any street gangs?	Yes	No
--	-----	----

10. Are there any recreational activities near your home?	Yes	No
---	-----	----

11.	Is there someone in your household that is severely ill?	Yes	No		
12.	Do the adults in your house use alcohol or drugs?	Yes	No		
13.	How often do they use alcohol or drugs?	Every day	More than 3 times a week		
14.	Have you been abused physically?	Yes	No		
15.	Have you been abused physically?	1	2	3	More
16.	Have you been abused sexually?	Yes	No		
17.	How many times have you been abused sexually?	1	2	3	More
18.	Do you sometimes go to bed hungry because of lack of food?	Yes	No		
19.	Are there violent acts in your house between adults?	Yes	No		
20.	Have you witnessed any violence in your street / neighbourhood?	Yes	No		

## APPENDIX B

### SELF-REGULATED LEARNING QUESTIONNAIRE

J L de K Monteith  
 Graduate School of Education  
 North-West University  
 Potchefstroom Campus

The following questionnaire consists of a number of statements related to learning and studying.  
 Read each statement and then mark one of the following choices on the answer sheet:

Key				
1	2	3	4	5
Not at all like me	Not very much like me	Fairly much like me	Much like me	Very much like me

Please completely cross the appropriate numbers that best describe you. For example, cross the 3 if you feel that the statement is fairly typical of you.

1	2	<del>3</del>	4	5
---	---	--------------	---	---

Try to rate yourself according to how well the statements describes you, not in terms of how you think you should be or what others do. There are no right or wrong answers to these statements. Please work as quickly as you can without being careless and please complete all the items.

1. After I have studied for a test or exam, I have a good idea of what marks I can expect for the test/exam.	1	2	3	4	5
2. I complete my assignments before the set dates.	1	2	3	4	5
3. When I am confused about something I am studying (in any Learning Area) I go back and try and figure it out.	1	2	3	4	5
4. When I study, I make notes about important parts of the work I am studying.	1	2	3	4	5
5. I check my work to make sure I did it right.	1	2	3	4	5
6. When I see I haven't got enough time to complete a task or assignment, I find more time.	1	2	3	4	5
7. When I set a goal I can't reach, I usually break it up in more achievable (smaller) goals and work at them one at a time until I reach my original goal.	1	2	3	4	5
8. Before doing an assignment, I first read as much on the topic as I can.	1	2	3	4	5
9. When I realize that I don't understand the work I am studying, I change the way I study.	1	2	3	4	5



10. When I have to do an assignment, I work out how much time it will take to complete the assignment before I start.	1	2	3	4	5
11. When I have to do an assignment, I make sure that I know what is expected of me.	1	2	3	4	5
12. I set specific goals for each section of my work.	1	2	3	4	5
13. If I realize that I can't solve a problem, I ask someone for help.	1	2	3	4	5
14. I first work out an outline before writing the answer to an essay-type question.	1	2	3	4	5
15. When I have written a test, I usually have a good idea of how well I have done, even before the test has been marked.	1	2	3	4	5
16. When I have a test to write I study before the time.	1	2	3	4	5
17. I ask myself questions to make sure I understand the work I have been studying.	1	2	3	4	5
18. I try to work at a regular pace.	1	2	3	4	5
19. Before I start studying, I check what I need to do to start learning.	1	2	3	4	5
20. When doing assignments, I make sure that I know how to follow the guidelines written on the assignment.	1	2	3	4	5
21. While studying I ask myself questions about the work I have learned to check if I understand the work.	1	2	3	4	5
22. When I prepare for a test, I make sure I know exactly what work to study and what type of questions will be asked.	1	2	3	4	5
23. Before I study new work in a Learning Area, I often scan the work to see how it is organized.	1	2	3	4	5
24. I prefer to set short term goals.	1	2	3	4	5
25. After completing an assignment, I check my work to make sure it is correct.	1	2	3	4	5
26. When studying I try to decide which part of the work I don't understand well.	1	2	3	4	5
27. Before doing an assignment, I speak to others (teachers, classmates, family) who know more about the topic than I do.	1	2	3	4	5
28. When I'm reading work, I stop now and then and go over what I have read.	1	2	3	4	5
29. When I study, I make notes of the words or facts I can't remember.	1	2	3	4	5
30. While studying, I know how long (time) it takes me to read or learn a specific number of pages.	1	2	3	4	5

31. often find that I have been studying for some time but I don't know what it is all about.	1	2	3	4	5
32. I try to change the way I study to fit the Learning Area requirements and the educator's teaching styles.	1	2	3	4	5
33. Before doing an assignment or start preparing for a test/exam, I set a goal which I plan to achieve with the assignment or test/exam.	1	2	3	4	5
34. During class, I make notes of important facts or words of the work we discuss.	1	2	3	4	5
35. When doing school work, I make up questions to help focus my studying.	1	2	3	4	5
36. I usually check if I have reached all the outcomes after completing work.	1	2	3	4	5

## APPENDIX C



<b>FOR OFFICE USE ONLY</b>
Participant number:
Site ID:
Data number:
Date administration:

### CHILD AND YOUTH RESILIENCE MEASURE (CYRM) -28

#### DIRECTIONS

Listed below are a number of questions about you, your family, your community and your relationships with people. These questions are designed to better understand how you cope with daily life and what role people around you play in how you deal with daily challenges.

To what extent do the statements below DESCRIBE YOU? Circle **one** answer for **each** statement. (There is no right or wrong answer)

	Not at all	A little	Some -what	Quite a bit	A lot
1. I have people I look up to. (Role models)	1	2	3	4	5
2. I can work together with other people.	1	2	3	4	5
3. Getting an education is important to me.	1	2	3	4	5
4. I know how to behave in different social situations.	1	2	3	4	5
5. My parents / guardians watch me closely.	1	2	3	4	5
6. My parents / guardians know a lot about me.	1	2	3	4	5
7. If I am hungry, there is enough food to eat.	1	2	3	4	5
8. I try to finish everything I start.	1	2	3	4	5
9. Spiritual (religious) beliefs are important to me.	1	2	3	4	5
10. I am proud of my ethnic background.	1	2	3	4	5
11. People think I am fun to be with.	1	2	3	4	5
12. I talk to my family / guardians about how I feel.	1	2	3	4	5

13. I am able to solve problems without harming myself or others (for example by using alcohol/ or being violent).	1	2	3	4	5
14. I feel my friend support me.	1	2	3	4	5
15. I know where to go in my community/neighbourhood to get help.	1	2	3	4	5
16. I feel comfortable in my school.	1	2	3	4	5
17. My family / guardians stands by me during difficult times.	1	2	3	4	5
18. My friends stand by me during difficult times.	1	2	3	4	5
19. I am treated fairly in my community.	1	2	3	4	5
20. I have opportunities to show others that I am becoming an adult and can act responsibly.	1	2	3	4	5
21. I am aware of my own strengths.	1	2	3	4	5
22. I participate in organised religious activities.	1	2	3	4	5
23. I think it is important to serve my community.	1	2	3	4	5
24. I feel safe when I am with my family / guardians.	1	2	3	4	5
25. I have opportunities to develop skills that will be useful later in life (like job skills and skills to care for others).	1	2	3	4	5
26. I enjoy my family's / guardians cultural and family traditions.	1	2	3	4	5
27. I enjoy my community's traditions.	1	2	3	4	5
28. I am proud to be (Nationality) .....	1	2	3	4	5

Michael Ungar, Ph.D.  
School of Social Work,  
Dalhousie University,  
6414 Coburg Rd. Halifax, NS, B3H 2A7  
Phone: (902) 494-3445/Fax: (902) 494-6709,

[michael.ungar@dal.ca](mailto:michael.ungar@dal.ca)



## APPENDIX D



NORTH-WEST UNIVERSITY  
YUNIBESITI YA BOKONE-BOPHIRIMA  
NOORDWES-UNIVERSITEIT  
INSTITUTIONAL OFFICE

Private Bag X1290, Potchefstroom  
South Africa 2520

Tel: 018 299-4852  
Web: <http://www.nwu.ac.za>

### ETHICS APPROVAL OF PROJECT

This is to certify that the next project was approved by the NWU Ethics Committee:

#### Project title :

**The Relationships between resilience, self-regulation and the academic performance  
of learners living in townships under adverse circumstances**

Student/Projectleader : Prof. M Monteith

Student: S Schutte

**Ethics number: NWU-00063-10-A2**

*Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation*

**Expiry date: 2015/07/22**

The Ethics Committee would like to remain at your service as scientist and researcher, and wishes you well with your project.

Please do not hesitate to contact the Ethics Committee for any further enquiries or requests for assistance.

The formal ethics approval certificate will follow shortly.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Halgryn'.

HM Halgryn  
NWU Research Ethics Secretariate

## APPENDIX E

### LETTER TO PARENTS / GUARDIANS

P.O. Box 1410  
KROONSTAD

13 July 2010

LETTER OF EXPLANATION TO PARENTS/GUARDIANS ABOUT THE RESEARCH ON THE TOPIC: *The Relationship between Resilience, Self-Regulation and the Academic Performance of Learners experiencing Adverse Circumstances.*

Presently I (Shelagh Schutte) am studying my M Ed degree in Teaching and Learning at the North-West University. I am in my final year and my supervisor is Professor Monty Monteith. I got permission from the Free State Department of Education (Fezile Dabi District) to do my research at this selected school. The reason for this letter is to inform and get permission from parents / guardians to allow their children to participate in this research which includes the completion of questionnaires and selective interviews.

The purpose of this study is to examine the self-regulation and resilience of learners who are exposed to adverse circumstances, I am of opinion that this school (and others) would benefit from the research to be done, seeing that the topic is of importance to educators and would influence other stakeholders within the education system concerning teaching and learning.

#### ETHICAL ASPECTS

Permission to do the research were obtained from the relevant authorities:

- The North West University
- Free State Department of Education – Fezile Dabi District
- The governing body and principal of the selected school

I give my assurance that the information given to me will be confidential and anonymous and can only be used in my thesis in such a way that it is not recognised as information from any particular learner.

If you give permission that your child could participate in this research please fill in the attached letter of permission and send it back to the school.

Thank you very much for your kind support.

Yours sincerely

S. SCHUTTE (Mrs.)

University no: 13162551

## LETTER OF PERMISSION / CONSENT FROM PARENTS

I \_\_\_\_\_ understand the importance for research on the topic: THE RELATIONSHIP BETWEEN RESILIENCE, SELF-REGULATION AND THE ACADEMIC PERFORMANCE OF LEARNERS EXPERIENCING ADVERSE CIRCUMSTANCES and therefore give permission that my son / daughter \_\_\_\_\_ in Grade \_\_\_\_\_ could participate.

Signature of Parent / Guardian: \_\_\_\_\_

Date: \_\_\_\_\_

**NOTE: Please sign and return to school ASAP**

## APPENDIX F

### LETTER TO LEARNERS

Privatebag X6001 Potchefstroom 2520  
Tel (018) 299 1111 Fax (018) 299 2799  
http://www.pu.ac.za  
P.O. Box 1410  
KROONSTAD  
Statistical Consultation Services  
Tel: (018) 299 2018  
13 July 2011

Dear Learner

Faxes: (018) 299 2557

### PARTICIPATION IN A RESEARCH PROJECT

15 November 2011

Presently I, Shelagh Schutte, am studying my M.Ed degree in Teaching and Learning at the North West University. I wish to conduct a research project entitled: *The Relationship between Resilience, Self-Regulation and the Academic Performance of Learners experiencing Adverse Circumstances*. I am in my final year and my supervisor is Prof. Monty Monteith and Prof. L. Theron. The aim of the research is to gain understanding and insight into the problems and achievements of learners, who face adversity, and how they develop and show resilience and self-regulation.

The Senior Phase learners of your school were selected to participate in this study. You are hereby invited to participate in the above-mentioned research.

The reason for this letter is to inform and get permission from you, the learners to participate in this research which includes the completion of two questionnaires (which should take about 20 minutes each to complete) and selective interviews. All questionnaires will be completed during normal school hours. Strict measures will be taken in order to protect your autonomy and confidentiality. Participation in this study is voluntary, and you have the right to withdraw your participation at any stage of the research should you wish to do so, with no consequences. Your human rights will be respected at all times.

Should you agree, you are hereby informed to assent to your participation in this research.

Thank you very much for your kind support.

Signed at ..... on the ..... day of ..... 2010.

\_\_\_\_\_  
SIGNATURE OF LEARNER

\_\_\_\_\_  
S. SCHUTTE (Researcher)  
M.Ed (Teaching and Learning)  
University no: 13162551



